

# SOIL REMINERALIZATION

## A Network Newsletter

VOLUME III, NUMBER 9

SPRING, 1988

*"Doing a pot test is the most convincing argument I know of. Anybody can do it. There are testing laboratory grinders everywhere. There is no lag time. In 6 hours you can get a microorganism population explosion. Taking some 6" clay pots, I filled them with a 50-50 mixture of earth and peat and 3 heaped tablespoons of dust. The results were astonishing!"*

John Hamaker



This may be a complimentary copy. If you wish to join *Soil Remineralization, A Network Newsletter*, please send \$12.00 (within the U.S.), \$15.00 (outside the U.S.) for one year (4 issues) to SOIL REMINERALIZATION, Joanna Campe, 152 South Street, Northampton, MA 01060.



# Soil Remineralization

## A Network Newsletter

The newsletter is a reflection, forum, round table of ideas, experiences and research of those concerned with networking and implementing soil remineralization.

Articles, letters, and photos are welcome and appreciated. It reaches an emerging grass roots community network around the world.

Microorganisms produce the protoplasm of all living things. Microorganisms themselves feed on the total mixture of minerals and gases in the biosphere and are energized by carbon. We can build enormous per acre tonnages of protoplasm into the soil in a very short time--enough so that sun energy reaching the plant becomes the limit of growth. The foods of microorganisms are the cheapest raw materials on earth.

John Hamaker

*The Survival of Civilization*

### Eden or Ice Age- Which Will We Choose?

The book *The Survival of Civilization* by John Hamaker and Don Weaver is regarded by a growing movement worldwide as a blueprint for the survival of the earth, restoring ecological balance and perhaps, even recreating Eden.

The remineralization of forests, farms, orchards and gardens with glacial gravel and rock dust, is nature's way to regenerate and fertilize soils. During an ice age, as glaciers grind rock to a fine dust over millennia, a fertile soil is created. Adding finely ground gravel dust- is a tremendous boost to organic agriculture and can make it truly viable by adding up to a hundred trace minerals and elements needed by all life and by nourishing the microorganisms in the soil, whose protoplasm is the basis of all living things.

There is evidence to suggest that as forests begin to die off worldwide, giving off carbon dioxide, the climate of the earth is altered, triggering the transition from the warm interglacial - to an ice age. We are hastening this process with the burning of fossil fuels.

Undertaking the task of remineralization is urgent to restore our agricultural soils and to save the dying forests in the temperate latitudes and stabilize our climate.

#### **Soil Remineralization, A Network Newsletter**

is available for \$12.00, or \$15.00 outside the U.S., 3-4 issues a year from Joanna Campe, 152 South Street, Northampton, Massachusetts, 01060 U.S.A.

### Features

- A Basic Primer of  
Soil Remineralization page 4-5  
Magic of the Vinegar Jug-  
with trace minerals  
by Arthur & Catherine Summers 18-19  
New Film/Book of Institute For  
A Future 7  
Grinder Update by Mark  
Williams 20-21

### International

- Live Earth Broadcast 6-7  
The I.U.C.N. Conference  
by Betsan Coats 8-9  
A Global Remineralization  
Program by Gregory Watson 10-12  
Burnely Horticultural Proposal  
in Australia 14-16

### Regular Features

- Letters 22-24  
The Network Listing 25-26  
International Gravel and  
Rock Dust Sources 7  
Hamaker Coordination 13  
Subscriptions 27

*The Survival of Civilization* (\$12.00) and  
*The Solar or Ice Age? Bulletin* (\$6.00  
donation) can be ordered from  
Hamaker-Weaver Publishers, P.O. Box  
1961, Burlingame, CA 94010

### On The Cover:

25 large Sugar Pie Pumpkins grown from one volunteer vine in Amherst, New Hampshire by Priscilla Donahey. It covered an area of approximately 20 square feet and was remineralized with 1/4 inch of stone dust, some horse manure and sawdust, a small amount of sheep manure and colloidal phosphate.



# In This Issue

Waiting for photos and studies and articles to arrive from Europe and other places, it seemed better to put out this issue and whatever comes that hasn't already can go into the next issue, rather than have this issue come out any later!

It is inspiring to the most visionary, to consider the potential impact of the **Live Earth, The World Broadcast On Our Common Future** and the **Live Earth Fund** on remineralization efforts worldwide, reforestation and other long term ecological projects. Let's join with our support in whatever ways we can to make this a reality. A Special Issue of the newsletter may come out for the concert which would contain the best of the last 9 issues and would be sent also to SR readers.

The new book *The End, The Imminent Ice Age and how to stop it* and the film *Stopping The Coming Ice Age* by Larry Ephron will be introducing a larger audience to the global climate crisis and soil remineralization.

Costa Rican officials have shown great enthusiasm for soil remineralization and it could be one of the first countries to officially take up a remineralization program. (See story on Costa Rica)

**A Global Remineralization Program, A Bioregional Perspective** is an excerpt of a paper that was submitted last September to the **Fourth World Assembly Forum and New Economics Symposium** in San Francisco by Gregory Watson. It is really encouraging to think that a policy maker in the realm of state government is putting forth such proposals. Also to see the **Burnely Horticultural** proposal on Soil Remineralization. This could help to serve as a model for others who are considering such proposals for colleges in their own areas to conduct trials and research.

When you read about *The Magic of the Vinegar Jug* with rock dust you may immediately want to jump up and try it. At least that is how Piet Bouter and I responded. Piet, especially, has been drinking large amounts (no time for it to age!) and has found it highly energizing.

Thank you for your subscriptions and many of those who sent \$3-25 extra as donations to increase the SR budget. In spite of that, many have still not resubscribed for 1988 and should do so to

receive the next issue. The budget so far will only cover 3 issues for this year as they are currently printed, with recycled paper. Photocopying of articles from the newsletter for networking to spread the message as much as possible is welcome and subscriptions are needed also to be able to continue producing the newsletter. Thank you for your support.

I am considering the possibility of printing the newsletter on newspaper. The cost for printing many thousands of copies would be about the same as the cost now of printing 800-1000 and they could be made available to the network for distribution in quantity for mailing costs only. This could really help to expand the outreach. It would also reduce mailing costs substantially (weighing much less). I welcome the readers' ideas and impressions on changing to a newspaper format.

John David Mann of *Solstice* writes, "We did learn that very few of the sources [for gravel dust] listed in SR are actually active; some are no longer in business, some have moved, some just don't have their heart in it at all."

con't page 27

## Spreading the message far and wide

### ERS

The Earth Regeneration Society has been very busy giving seminars and presentations to conferences which cover the environment, science, labor organizations and the democratic party.

February 24-28 at the Western Regional Science Association meetings their seminar was entitled, *Climate Stabilization, The Central Focus of Regional Planning*. The theme was a call to focus more directly and fully in the emergency nature of climate change, the need for climate stabilization work, and the role of regions in carrying out such work. Alden Bryant's paper was on *Climate Stabilization Through Action*

*on Four Levels*. Regional action for climate stabilization was broken down into a systems approach to earth regeneration programs for the planet, the U.S., California, and a house with a yard.

Coming up for the ERS, *A Modest Plan To Save The World*, the J.D. Bernal World Scientific Conference on **Security And Disarmament**, in preparation for the Third Special Session on Disarmament of the United Nations, at the World Trade Center in NYC. For more info on ERS activities, and to support and receive their newsletter see SR #8 and write to ERS, Inc., 1442 Walnut St, #57, Berkeley, CA 94709, U.S.A.

### Solstice Magazine

John David Mann, editor of *Solstice, Perspectives on Health and the Environment*, continues to write feature stories on the climate and remineralization of a very high quality.

SR recommends getting this exciting publication, available from Solstice, P.O. Box 4813, Charlottesville, VA 22905. Enclose \$5 per subscription for 4 issues. The next issue is a knockout with material on SR that will be new and fascinating to readers.

Andrew Rothovius has written an excellent article for the Peterborough, New Hampshire "Transcript", (2-4-88) daily newspaper called *Saving the trees- and the earth* with emphasis on the climate and remineralization and Stephen MacFadden continues also to write a column which often touches on these issues in the same newspaper.

Shoshame, is distributing free through his organization:

**Transformational Research, Inc.**, 227 Oxford St., Dept. SP-L, Hartford, CT 06105, (203) 232-2961, a resource list on climate and SR and other pertinent issues. Please distribute and reproduce freely. Shoshame says the list will reach millions of people.



# A Basic Primer

# Soil Remineralization

## The Extraordinary Results of Soil Remineralization

The soils of the entire world have become severely de-mineralized by erosion over thousands of years. Plants require a continuous intake of minerals, just like we do, and for very similar reasons-- calcium to build structural support, iron to carry oxygen, and so on. Plants growing on mineral-depleted soil do not get enough nourishment and so become smaller, less-abundant and less hardy, more vulnerable to all the insects, worms and fungi they are prey to.

Remineralization causes a phenomenal growth of the micro-organisms in the soil. It increases the nutrient intake of plants. It counters the effects of soil acidity, prevents soil erosion (just for that reason it would be worth applying rock dust), increases the storage capacity of the soil, contributes to the building of precious humus complexes, has anti-fungal properties, and when you spray it on plants it repels insects as well. The plants and trees become highly resistant to insects, disease, frosts, and drought. It also enhances and speeds up the process of composting, so if you're composting for your garden, consider putting on some rock dust. It can be even more effective than just directly applying it to the land.

The results of long term experiments released in 1986 showed that *in a forest where pine seedlings were remineralized, after 24 years the wood volume was four times higher* than in the untreated area.

The best source of soil minerals is simple crushed gravel dust. In 1976 John Hamaker spread gravel crusher screenings on part of his ten acres in Michigan. The following year, in an area of sparse rainfall and dry summers, *and with no irrigation*, his corn produced 65 bushels per acre, compared to yields of under 25 from other local farms.

Moreover, when independent analyses were done, Hamaker's corn was found to contain 28% more protein, 47% more calcium, 57% more phosphorous, 60% more magnesium and 90% more potassium than the same type of corn grown with chemical fertilizers nearby.

Twenty years ago the USDA published studies which showed that cement

kiln dust (a less-satisfactory source of minerals) also produced better crops, but they couldn't understand "what element" in the dust was responsible and dropped the matter.

Don Weaver grew 18-foot pole beans on remineralized soil (Jack and the Beanstalk?) and got *two to four times the normal organic yield*. Alan LePage of Vermont grew a crop of carrots averaging 1-1/2 feet long. And there was no insect damage to any of these crops.

Hamaker estimates that on fully remineralized soil, American agriculture could grow *four times* as much food as it is capable of now, or the same amount of food at about one-fourth the cost. And with no pesticides or chemical fertilizers.

## A Global Perspective On Climate

The problem of soil demineralization also has a global perspective. It is known that the earth's soil becomes demineralized during each interglacial period, the relatively short 10,000- year warm period between each 90,000-year major ice age. And that the consequent decline and death of the world's forests and other vegetation which occurs causes great quantities of carbon dioxide to be given off. The level of carbon dioxide in the earth's atmosphere has been rising exponentially for the past century. Carbon dioxide and other greenhouse gases trap excess heat from the sun, potentially affecting the world's climate.

It is also well-known that when the glaciers advance and then recede during each recurrent ice age, they grind down rocks in their path, and that its mineral-rich dust is blown far and wide over the surface of earth, remineralizing its soil and causing plant life to thrive again.

John Hamaker has supplied one missing piece of a cosmic puzzle to provide an explanation, long sought, of the awesome 100,000-year cycle of major ice ages. Hamaker points out that the greenhouse effect occurs primarily in the tropics, which get the most sun, rather than in the polar regions which get very little. When this happens, the temperature differential between the

tropics and the poles increases, resulting in fierce wind systems, hurricanes, tornadoes and storms.

The moisture picked up by these increasing storm systems also is transported to the higher latitudes, where it gets deposited as snow and ice, eventually bringing on glaciation and the next ice age. This has been happening in recent years, with record snow cover in the Northern hemisphere and a shortening of the growing season, by weeks in some places, a pattern which is also accelerating year by year. Hamaker estimates that within a few decades the growing season may have decreased so much that millions of people will starve, in the richer nations as well as the poor.

## The Nutritional Aspect

When we eat food grown on depleted soil we too, like the plants, lose our natural resistance to disease. All the degenerative diseases have been on the rise in America in recent decades. Dietary fat, cholesterol, salt and overly-refined foods seems to be a major factor, but a serious deficiency of minerals in our food may be another. Mineral depletion of soils has been found to be directly correlated with death rates. And deficiencies of only one of a number of trace minerals-- copper, iron, selenium, etc.-- have been found, in laboratory studies, to be associated with an increased risk of cancer. You may want to grow more complete, nourishing food for yourself and your family.

## Buying Gravel Dust

What does it cost to remineralize your soil, how easily can it be done, and how soon will you see results?

It's relatively easy and it doesn't cost much:

Call your local gravel pit (look in the Yellow Pages under Cement-Wholesale, or Sand and Gravel) and ask if they have crushed gravel screenings made from mixed rocks, the kind that comes out of river beds-- crushed and passed through a 1/4 inch or finer screen. The gravel dust will probably cost from \$1- \$8.00 per ton plus the cost of transportation if the gravel pit delivers it to your garden. As most of the cost is in transporting the rock dust, having a



truck or access to one is an advantage. A cooperative initiative would also cut costs down.

You should begin to see improvements in the health and rapid growth of your plants *in a matter of days or weeks*. As you remineralize only half your acreage at first, you will begin to see distinct differences very quickly.

## How To Remineralize- from John Hamaker

A grower of crops or a gardener needs a good response the first year after a fall application. The response in any one year depends on the amount of minerals available to the microorganisms, soil moisture, and the amount of inert organic matter.

If the last two factors are satisfactory as little as 3 tons of gravel dust per acre worked into the top 4 inches of soil should give good results. However I prefer about 10 tons per acre worked in about 8 inches since one application will eliminate the cost of a number of more frequent applications and give high yields.

As I use the term gravel dust I mean dust 90% of which will pass through a 200 mesh screen. Obviously if only 5% will pass the screen you would need a great deal more to give satisfactory results. There is a vast difference in surface area between dust and fine sands. As demand grows and more and more people offer dust for sale the "dusts" will vary widely in quality and fineness of grind.

I recommend a couple of tests before buying. A pot test will tell you if the dust will increase microorganisms as reflected in plant growth. You can make a test of fineness of grind.

Fill a clear glass container about half full of water. Shake it vigorously and let it settle overnight. You can measure the factions and get fairly accurate percentages. If the container is allowed to stand until the water has dried out, the dust layer will shrink to about 1/3 the original measurement and give a more accurate percentage of dust.

Your first observation, however will tell you if you are buying mostly sand. If the sands have gone through a grinder they will be activated and give longer life to the soil; but the cost of transportation of the large quantities required to give satisfactory yield will generally be prohibitive.

There is one other test that relates to buying dust: A sample from the stockpile can be weighed, dried in an oven and weighed again. That way you can know how much is water and how much is dust.

I suspect that the water content of dust in open storage can vary widely. If the material is bought by the yard there is a probable increase in bulk when wet. As the industry expands they will probably sell in dry weight and adjust for the moisture. But for now I expect dust will be sold "as is", take it or leave it. However, it doesn't hurt to ask about moisture content so the sellers can begin thinking about standardizing sales practice. The buyer needs to test so he can know the actual weight of dust he is buying. A glance at the table of particle sizes and surface areas on page 21 in the book *The Survival of Civilization* makes it obvious that only the water suspendable clay-size particles, the dust, will do you any good in economical quantities. The minimum practical screen, 200 mesh, includes silt and about half the very fine sand and you can not buy by screen test alone. You may be getting only silt and sand with no dust. So you must know the percent of water-suspendable material so you can calculate how many tons of a given ground product you must buy to get the number of tons of dust per acre you have decided to apply.

One other thing might be useful. I put about 2 inches of sand on our garden before plowing. It will last a long time and give some yield after the dust is used up. I am sure it has been contributing to what we grow. Unscreened sand (preferably fine sand) from a local gravel pit is much more economical than shipping dust which is mostly silt and fine sand.

**John D. Hamaker**

Sometimes the gravel pits have mesh screens and can measure the exact fineness of the gravel. Though it may be hard to find the ideal fineness- 90% passing through a 200 mesh screen- it may be practical to use even if only 20% or so passes through a 200 mesh screen and at least 50% passes through a 100 mesh screen. You will have the finer material immediately available to the soil and the rest will break down over time. If most of it passes through a 200 mesh screen, it will have a fine consistency like flour or cement. The gravel pit may have machinery to crush the rock finer and may crush it for you.

## Doing Pot Tests First

It is a good idea to add the gravel dust to clay pots and plant radishes or other fast growing plants and observe their progress. As John Hamaker writes,

"Doing a pot test is the most convincing argument I know of. Anybody can do it. There are testing laboratory grinders everywhere. There is no lag time. In 6 hours you can get a microorganism population explosion. Taking some 6" clay pots, I filled them with a 50-50 mixture of earth and peat and 3 heaped tablespoons of dust. The results were astonishing!"

You can compare different mixtures or samples of gravel dust depending on what's available in your area. Use a control without rock dust to compare as well. You can also begin with small plots in the garden. You can see the results of the gravel dust you've chosen and then add it in larger quantities to your garden. Work the gravel dust into the topsoil, if possible. By the way, very fine dust sprayed directly on plants and trees has been shown in research in Germany to keep insects away very effectively.

Combining gravel dust with organic materials in compost is a great way to solve application problems and speed up the process. Don't forget a handful of soil to inoculate with organisms. Gravel dust improves aeration and structure and therefore prevents rotting. Gravel dust is assimilated even more quickly in compost than in poor soils.

Soil erosion is an effect of the shortage of minerals available to support the soil organisms. As Hamaker says,

"That shortage can be made up on any piece of land in the time it takes to work ground gravel dust into the topsoil. When that is done, the soil microorganisms begin to multiply and it is they who prevent soil erosion by granulating the soil and holding it against both wind and rain."

We would like to know what results you get from remineralized soil, so that we can improve our knowledge and data-base. Please call or write us. Photos with written reports are welcome and an important contribution to our network.

The above information is condensed from the writings of John Hamaker, Don Weaver, Larry Ephron and Joanna Campe.



# Live Earth

## The World Broadcast On Our Common Future

A Program of the ORBIT INTERNATIONAL FOUNDATION  
for the establishment of the EARTH FUND

*with the participation of international agencies and environmental organizations worldwide*

"Live Earth will fund specific, and highly effective environmental action programs to remineralize and reforest soils, clean up the seas and subsoils, find substitutes for agricultural and industrial ecologically noxious chemicals and technologies and set aside "genetic conservation areas" and natural reservations."

**The Carpentiers de Gourdon**

### Live Earth proclaims

If enough of us resolve to eradicate the problems that confront our planet and all her inhabitants, we can do it!..We can perform the miracle and save our future and the future of our globe and of all its life-forms.

**Live Earth** is a World Broadcast in part inspired by the Report of the World Commission on Environment and Development entitled **OUR COMMON FUTURE**, will be held on July 23, 1988, a series of concerts held successively in the U.S., Findhorn (probably hosted by Julie Christie with a special emphasis on the rainforests), Vancouver, Canada, Moscow (with the participation of Gorbachev), Bombay, India, Seoul, Korea and Sidney, Australia over a 10-12 period.

Several international organizations and governments are supporting the global initiative and invites all who are concerned with the future of the planet and the fate of all life on it. World leaders in various fields will address the Broadcast.

The U.S. concert will be held at Mile High Stadium in Denver, Colorado and will have the participation of some of the world's most renowned music groups. The Producer of the concert will be Joel Gallen, the producer of **Top of the Pops**, in Hollywood and the Broadcast Producers and Directors are those who made **LIVE AID** a worldwide success.

### Live Earth is

a celebration of our citizenship as stewards of the Earth.

### Live Earth will

lead to the creation and provide the endowment for the Earth Fund which will coordinate non-governmental organizations and the private sector, in relation with governments in a major effort to stimulate educational, political and technical activities for sustainable development worldwide and an enhanced environmental ethic.

### Live Earth responds

to the recommendations made by the Stockholm Conference on the Environment, the World Conference on Environment and Development, the 4th World Wilderness Congress, the International Union for the Conservation of Nature and others.

### Live Earth paves the way

for the creation of a World Conservation Corp to help the most environmentally threatened countries preserve, restore and enhance their natural resource base and to take the lead in ecological restoration planning and programming all over the world.

### Live Earth provides

the opportunity for a pledge, to be taken by all concerned human beings, irrespective of race, creed, sex, economic and political status or conviction, to dedicate themselves to forging comprehensive, original

and visionary solutions to the critical problems and crises that beset our World.

### Live Earth espouses

the wisdom of the ancient Chinese axiom: "where there is no way out, there is a way out..." Let us find and blaze it together.

### Live Earth will contribute

to the creation of an international constituency of informed and conscious Earth citizens working together to build a New Era of ecological and social harmony, justice and prosperity.

### Live Earth will create

an annual international award for excellence in environmental thinking and action, in honor of Jacques Cousteau.

For information there are two offices to contact:

### Live Earth The World Broadcast On Our Common Future

830 20th Street #103  
Boulder, CO 80302  
(303) 447-2754

3512 Northampton St. N W  
Washington, D.C. 20013  
(202) 363-8804



# A Draft Resolution has been put before the members of the Congress of The United States:

## Preamble

-In view of the rapidly worsening plight of the Planetary Environment and of the threats to the survival of all life, including human life, posed by the current developments in our demography, science, technology and industry.

-In view of the previous resolution passed by the U.S. Congress concerning the Denver Declaration, voiced by the 4th World Wilderness Congress in September 1987 in Colorado.

-In view of the conclusions reached by the 1987 Report of the World Commission on Environment and Development.

## The Congress of the United States of America Resolves

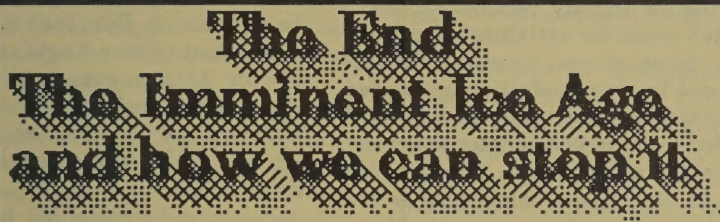
- to support the **Live Earth World Broadcast Initiative** which aims to arouse global attention and spur organized national and international action on the vital issue of the Earth's well-being.

-to endorse the **Colorado Plan for Earth Restoration** and environmental preservation, in consonance with the recommendations of the **World Commission on Environment and Development's Report** and in collaboration with such established programs as the World Conservation Strategy, the World Charter for Nature, the International Geosphere-Biosphere Program, the Earth System Science Program of the National Aeronautics and Space Administration, the Global Geosphere Program and others.

## Therefore

- The Congress of the United States of America declares the  
5th June 1988 to be

## Live Earth Day



"One of the most relevant books since the last ice age."  
**Robin Williams**

"An astonishing service for humanity."  
**Kenneth Watt**, Professor of Environmental Studies, UC and author of the Annual Review of the Environment for Encyclopedia Britannica.

"I consider this completely valid."  
**Victor Kovda**, former president, Scientific Committee for Environmental Problems, International Council of Scientific Unions

"This deserves the most urgent attention."  
**Walter Corson**, Global Tomorrow Coalition

"The significance and timeliness of this material cannot be overstated. We have absolutely no time to lose."

**Greg Watson**, Secretary for Science and Technology, Commonwealth of Massachusetts

The Institute for a Future is distributing a documentary film, *Stopping the Coming Ice Age*, and a book *The End: The imminent ice age and how we can stop it*, published by Celestial Arts, both based on the work of John Hamaker. The film, is available for purchase in the following formats:

	To individuals	To organizations
VHS, Beta	\$20	\$35
3/4"	95	95
16mm film	525	625

The book *The End* is available from the institute for \$10 postpaid, quantity discounts are also available, all postpaid in the U.S. Include tax (7% Alameda County, 6.5% Bart Counties, 6% California.

Up to 10 copies at \$7.50 each

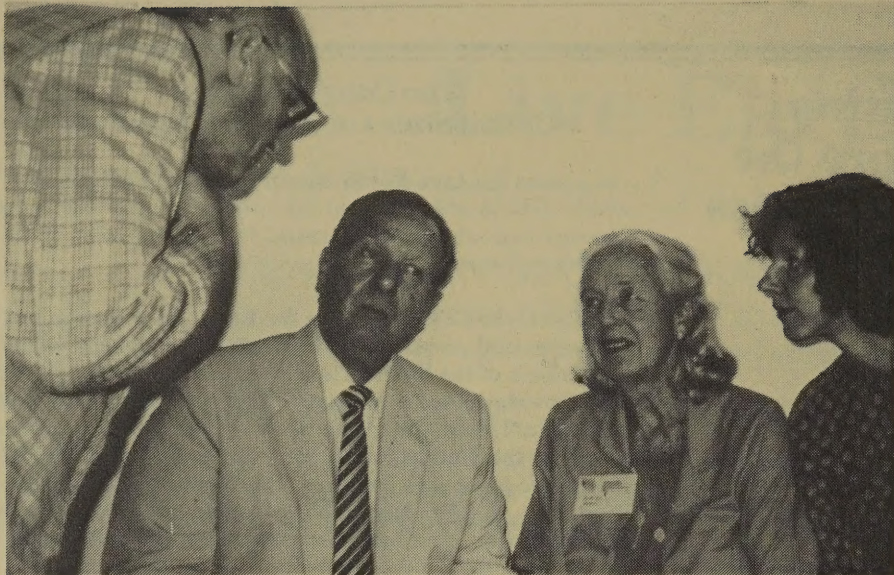
Up to 25 copies at \$7 each

Up to 50 copies at 6.75 each

More than 50 copies at \$6.50 each

Payment can be made by cash, check, money order, VISA or MasterCard. Purchase orders also accepted to **Institute For A Future**. A Nonprofit Educational organization, 2000 Center Street Berkeley, CA 94704 telephone (415) 524-2700.





Betsan Coats meeting with the former President of Costa Rica, Dr. Rodrigo Carazo, and also present were Edmundo Kandler and Joanna Campe

## The I.U.C.N. Conference In Costa Rica

Although soil remineralization information, including the book *The Survival of Civilization* by Hamaker and Weaver, was taken to the I.U.C.N. Headquarters (International Union for the Conservation of Nature) at Gland near Geneva in 1983, and further information has been sent from time to time-it is difficult to know if it has been seriously considered.

The I.U.C.N. emphasizes the importance of using well-established local methods and customs of husbandry that have proven their worth through centuries of use and certainly the use of gravel dust and stone mulch would come under this heading. It is obvious what an important part gravel dust could play.

I wrote in September 1987 to Dr. Mustafa Tolba of U.N.E.P. (United Nations Environment Programme) sending him a folder of varied remineralization information. As he was away on an extended mission, Dr. Jusuf J. Ahmad, Director of Special Assignments replied on his behalf- and I quote the relevant part of his letter:

"I have discussed the issues raised by you with my colleagues in UNEP and their consensus view could be summarized as follows:

1) use of silt deposits and rock dust

to improve soil fertility "remineralization", in limited areas, for sustainable crop production is an ancient practice. The improvement in crop production envisaged is due to the beneficial mineral contents of the added material and perhaps to the improvement in soil structure. The desirable effects, in some cases, would only be obtained by applying large amounts of the rock material, provided that no single element was over supplied and could thereby cause an imbalance or toxicity. Large scale application of this technique is hampered in most of the cases by technical and economic reasons.

The idea of "remineralization" will be considered in the forthcoming African Soils and Fertilizers Network Coordination Unit meeting (19-22 October 1987) to mobilize locally available rocks and fertilizer sources to contribute towards the hopeful 'greening of Africa'."

I am writing to him to find out what conclusions the ASFNCU came to when it met in October 1987.

I was able to talk to quite a number of people concerning remineralization and due to the preparation made in advance; by Senor Edmundo Kandler, who has been a remineralization enthusiast since my visit to Costa Rica in 1984, had a good session with Dr. Alvaro Umana, Minister for Natural Resources, Mines and the Environment. He was familiar

with the remineralization concept, thanks to Edmundo. He said that as he was a chemist, he understood the importance of remineralization and suggested doing a pilot scheme under the supervision of Edmundo Kandler. This is being set in motion with least possible delay.

The importance of successful results of the pilot scheme cannot be over-emphasized, since Costa Rica has become an ecological model and the eyes of the I.U.C.N. and World Wildlife Fund are focused very much upon it.

Should the pilot scheme be successful, news concerning it will spread worldwide, through the best possible channels for its application. There is no reason to doubt its success, as all such tests have shown remarkable results.

Dr. Gernot Graefe of Vienna, working in the Austrian forests with Dr. Maria Felsenreich, is a scientific researcher in remineralization and it is extremely fortunate that Edmundo Kandler, being originally German, will be able to consult him in German correspondence, which greatly facilitates and hastens the correct implementation of the pilot scheme. Edmundo is appointed to the Asamblea Legislativa as its Advisor Ad Honorem, and so carries much weight. He is in touch with many Ministers and is an influence in saving forests and the re-afforestation scheme in Costa Rica.

Joanna Campe of SR joined me in San Jose, Costa Rica, with her husband Christian and I was fortunate that my middle son, David, came too, from Seattle. Both Joanna and David attended as Press Reporters, she for her magazine and David for a television program. Because of this, Joanna had the freedom of attending press meetings of many key people- which were very useful for the remineralization cause.

I also had a talk with Dr. Rodrigo Carazo, Director of University of Peace, whom I knew from my 1984 visit to Costa Rica and who is also familiar with the principle of remineralization. He is closely in touch with Brigadier General Michael and Mrs. Eirwen Harbottle, founders of the London Centre for International Peacebuilding, who are actively involved in an educational remineralization project. He is visiting them in London later this year.

**Betsan Coats**



Meetings with officials in Costa Rica while attending the I.U.C.N. Conference were very encouraging as the idea of Soil Remineralization was met with great enthusiasm by Minister Umana, Dr. Carlos Quesada, who is director of the *World Conservation Strategy for Costa Rica* and and Dr. Gabriel Quesada, concerned with regeneration that is directly connected to the environmental impact of mining. Both Dr. Carlos Quesada and Dr. Gabriel Quesada work in the Ministry of the Environment, Mining and Natural Resources with Dr. Alvaro Umana.

Hamaker Coordinator Edmundo Kandler has done a tremendous job of networking and creating interest in remineralization in Costa Rica, and the two visits of Betsan Coats in the last few years have really spurred on that interest. The most practical thing at this point is to have gravel dust samples taken from different regions in Costa Rica and have pot tests and trials done, and perhaps have spectrographic analyses done in Austria with specific recommendations by Dr. Graefe. It is hoped that Dr. Graefe might be able to visit with Costa Rican officials at some point and advise them further.

There was also an opportunity to meet and speak briefly with CNN owner Ted Turner who was in Costa Rica for a board meeting of the *Better World Society*. He was given a few copies of the newsletter and he also gave one to one of his executive television producers. Also, some of the documentary producers are collecting a file on soil remineralization and it is hoped will be



From left to right, Hamaker Coordinator of Costa Rica Edmundo Kandler, Betsan Coats, and David Coats.

interested in covering the issue at some point in the near future.

An interview on the climate/soil remineralization issues also took place at the *University for Peace* with the *Radio for Peace International*. The interview on the climate and soil remineralization will be broadcast worldwide, at various times.

**RFPI** is an international short-wave station created as a joint project of the *World Peace University Oregon, USA* and the *University for Peace* in Costa Rica. RFPI operates on an autonomous financial basis, supported entirely from private donations, program fees, and listener support. RFPI is a peace communication tool dedicated to broadcasting programs exclusively on the issues of peace, food sufficiency, social justice and environmental preservation.

The emphasis is on positive actions and methods. RFPI is to be a forum for creative, working and positive concepts and actions and to share these worldwide.

The Current Operations Schedule is 0100-0400 UTC 7.375 MHz weekdays and 2100-0000 UTC 15.495 MHz weekdays. A tax-deductible donation can be sent to **RFPI**, c/o *World Peace University*, P.O. Box 188, Sweet Home, OR 97386 and for further information regarding programming you can write to RFPI, *University for Peace*, Apartado 88, Santa Ana, Costa Rica. J.C.

## Hamaker Coordinators for Colombia

Architect Camilo Mazuera and ecologist, teacher and healer Eva Montaño (photo at left) have become new Hamaker Coordinators. Edmundo Kandler, Camilo and Eva may collaborate in writing a small booklet on remineralization in Spanish. *Ecologia Accion Social* in Madrid, which distributes information to ecological groups all over Spain and has already distributed posters and information, has offered to publish and make available such a booklet. This would be really helpful in disseminating information on SR throughout the Spanish speaking world.





# A Global Remineralization Program with a bioregional approach

by Gregory Watson

"Humans will discover the...benefits that result from conscious cooperation. It would be impossible,...for nations to mount a massive global remineralization program and support huge military budgets at the same time."

*Gregory Watson is the Director of Science and Technology for the Commonwealth of Massachusetts, assistant to the Commissioner of Agriculture August Schumacher and a science advisor to Presidential Candidate Governor Dukakis.*

Buckminster Fuller, as he so often did, seemed to anticipate the crisis under consideration in this paper when he wrote (1981): "I'd like to turn our attention to soil and land conservation and its essential functioning in support of total ecological regeneration and the work of those who would like to be on the productivity team for reforesting the world as well as those working on ways to hold onto and regenerate the fertile topsoils -- the people who are concerned in a very major way with the planet Earth as total crystalline, hydraulic, and pneumatic system."

It is arguable that humankind faces no greater peril than that posed by the alarming rate at which forests and topsoil are disappearing. We must act quickly, responsibly and decisively in order to avoid major ecological disruptions and the loss of millions of human and nonhuman lives.

Shortly before his death, Fuller read *The Survival of Civilization*. He called it "completely convincing," and went on to say that "I will tell all those inquiring of me about matters relevant to our survival that they had best read Hamaker's book..."

One of Fuller's applications of synergetic geometry led to the development of the Dymaxion Map for which he was granted a U.S. patent in 1946. In describing his invention Fuller wrote, "My commitment to deal henceforth only with total planetary physical and metaphysical resources employed only in technology useful for all people around the surface of Spaceship Earth called for a nondistorted map of the world upon which to identify the resources and the people (Fuller, 1983).

It is, in fact, the only map that per-

mits a viewing of all of the Earth's land masses and oceans at once, in their proper geographic relationships and with virtually no distortion (see Figure XX). Fuller used the Dymaxion Map as the basis for developing the **World Game**; the first comprehensive planning tool that acknowledges the need for considering the Earth as a whole system.

---

"We have the opportunity to implement a plan that will assist Gaia in the rebuilding of its soils and reforesting its lands. If we accept this responsibility we may avoid the only other Gaian alternative for getting this job done, i.e., via the destructive route of glaciation. What is needed now is a **coordinated global remineralization program**."

---

Fuller color-coded the Dymaxion Map so that the **mean low annual temperature** for every location on the surface of the Earth is recorded. You see, long before his introduction to Hamaker's theory, Fuller was well aware that humans are totally dependent upon water for their survival. He also knew that in either its frozen or gaseous state, water no longer possesses those properties that make it essential to life.

While temperatures at different locations on the Earth's surface often fall below the **freezing point** of water, Fuller observed that it has been billions of years since it has come close to the **boiling point** of water. Therefore, from a purely functional point of view, Fuller surmised that "the colder an area gets, the more the annual temperature varies annually, the more inventive humans who live in those areas have to be to survive." (Fuller, 1981).

It is now time to employ some of that inventiveness. We have the oppor-

tunity to implement a plan that will assist Gaia in the rebuilding of its soils and reforesting its lands. If we accept this responsibility we may avoid the only other Gaian alternative for getting this job done, i.e., via the destructive route of glaciation. What is needed now is a **coordinated global remineralization program**.

The concept of remineralization is simple and straightforward. No high-tech wizardry is required to get the job done. We need to mechanically grind rock into dust and work it back into the soil. This concept is analogous to the practice of composting.

The New Alchemy Institute is located on a 12-acre abandoned dairy farm in

Falmouth, Massachusetts. Co-founders John and Nancy Jack Todd and Bill McLaren established the institute on that site even though they were warned that the soil was so poor that it would never support agriculture.

The Todds and McLaren immediately decided that the first project at New Alchemy would be an intensive soil-building program. Because the philosophy of the institute was based on the premise that Nature provides the best models for design, they sought to employ natural soil-building strategies. Realizing that in deciduous forests, fallen leaves decompose into humus, and thus return valuable organic nutrients to the soil, the New Alchemists encouraged their neighbors to bring their raked-up leaves and grass clippings to the institute where they would be composted instead of depositing them at the town dump where they would be added to an already over-taxed landfill. This composting effort became the nucleus of the soil rebuilding program at New Alchemy.



Within five years land that had been declared unproductive was yielding enough produce to feed 13 people three vegetable portions a day for a full year from one-tenth of an acre -- without the use of any chemical fertilizers or pesticides! Today composting is commonly practiced by gardeners.

Hamaker's thesis merely points out that like the organic materials that make up soil, its mineral content must also be recycled. It just so happens that Nature's methods for recycling inorganics requires tremendous amounts of mechanical energy. So the choice is either tectonics and glaciation or human technology.

Fortunately, the technologies needed to achieve this important and ambitious goal already exist. Efficient small-scale grinders capable of crushing hard silicate rock and softer rocks into dust have already been designed and patented in the United States and Australia.

The greatest challenges are not technical ones, however. The critical first step involves education: mobilizing human resources by making them aware of the problem, its causes, and our options for dealing with it. We must then impress upon our government officials the fact that this is a very serious matter requiring immediate attention and action.

## Global Synergy Through International Cooperation

This will not be easy for, as I have stated earlier, the only real solution is a global remineralization program. National programs aimed at saving this or that political entity won't work. As Buckminster Fuller observed, sooner or later we will learn that as far as human survival is concerned, international cooperation will have to supersede competition. "It's going to be everybody or nobody," he warned.

And that really is the ultimate lesson to be gleaned from all this. The symbiotic relationships in Nature preserve the integrity of the biosphere. I will characterize symbiosis as the process by which Gaia achieves cooperation at the level of the biosphere as a precessional "by-product" of species competition. Humans, too, will have to be "forced"

"Hamaker's thesis merely points out that like the organic materials that make up soil, its mineral content must also be recycled. It just so happens that nature's methods for recycling inorganics requires tremendous amounts of mechanical energy. So the choice is either tectonics and glaciation or human technology."

into cooperating with one another or perish.

If we choose to assist Gaia in its efforts to sustain its ecological integrity, the rewards will be great. Humans will discover the synergistic and precessional benefits that result from conscious cooperation. It would be impossible, for example, for nations to mount a massive global remineralization program and support huge military budgets at the same time. Cynics might conclude that the concept--even if it were to become "scientifically verified"--is doomed for that very reason.

But truth is more powerful than knowledge, and the Gaia and Hamaker hypotheses transcend scientific verification. So in one sense, we must act on faith. Personally, I have ultimate faith in Gaia, for I am fully convinced that Gaia is (and here I take some liberty with the words of Albert Einstein) "subtle but not malicious."

## What Right Have We to Intervene in the Climate Process?

Suppose that the scenario that I have presented in this paper is true. The question still remains as to whether humans have any business interfering with the global climate cycle. After all, haven't we made a mess of things every time we've attempted to "improve" on the way Nature does its job? What makes me think that this time would be any different? These questions continue to nag a large number of people who are convinced that the Hamaker hypothesis is correct.

They are important ethical questions that deserve honest, thoughtful responses. I'm certain that I can't provide the kind of response that will satisfy everyone. The best I can do is to try and

convey why I believe that human intervention into the global climate process is the responsible thing to do at this time.

It is clear to me that humans have reached a stage where we must make what will perhaps prove to be the most important decision in the history of our evolution on this planet. For eons now we have groped along like other biological species playing the game of "survival of the fittest." We have designed our societies and activities on the premise that we can succeed only by competing with one another.

Competing for what? For what we have been told are the "limited resources" of the Earth. *The myth of scarcity* has been drummed into our collective consciousness since the time of Darwin and Malthus.

The concept of scarcity *is* a myth. More than that, it is an incredibly selfish, demoralizing, unempowering and self-serving fabrication. A lie. For the truth is that **the Earth is abundant!**

The *myth of scarcity* is what generates the need for the cultural institutions that perpetuate dependency. Institutions such as governments, churches, courts, etc.

The *myth of scarcity* keeps us in a competitive "mode." As long as we are obsessed with competition and fear our competitors, we cannot see the synergistic benefits of cooperation. Power and wealth remain concentrated in the hands of the corporate and political leaders who manipulate people and economies as they play the game of "divide and conquer."

Meanwhile, the collective know-how accumulated by humanity as we have evolved on the planet goes virtually untapped. Cooperation is still an aberration for us. Something to be tried every once in a while as an "experiment."

Fuller was convinced, as I am, that Nature endowed the human species with a powerful mind so that we would eventually realize that *conscious cooperation* is the key to continued human survival and to accelerated planetary evolution. Cooperation is the only thing that will prevent humans from sharing a similar fate with the 90 percent of the



species that once inhabited this planet and have since gone the way of extinction.

"Nature is determined to make a success of the human species," Fuller often admonished. So it seems. Just when it would appear that we are on the verge of annihilating one another, we are provided with one more chance. Before giving up completely on us, Gaia will try to *force* us to cooperate. And should we choose not to work together, then in all likelihood we shall perish and become another ecological statistic. A noble, but failed evolutionary experiment.

If we do what must be done to restore the soils and stave off the next glaciation, humans will find themselves engaged in an unprecedented display of global unity and cooperation. And we will be transformed in the process, for we will have engineered our own evolutionary quantum leap.

## A Bioregional Approach to Remineralization

Even if Hamaker's hypothesis linking demineralization with the ice ages is proven to be incorrect, a world-around program of remineralization still makes sense from the perspectives of agriculture and forestry. There are a number of reasons why this is so.

First of all, it has been clear for some time now that the reign of large-scale, chemically-based food production has run its course. This is true for both economic and ecological reasons.

The agribusiness farms that ushered in the "Green Revolution" are no longer economically viable. They have become inflexible "dinosaurs" that are addicted to a steady diet of chemical fertilizers and pesticides. The continued and indiscriminate use of these chemicals over a period of nearly five decades has rendered them virtually ineffective.

The fertilizers have helped to destroy the structure of the soil and have been a major factor contributing to the devastating loss of topsoil via erosion. Many of the insects that feed upon farmers' crops have developed immunities to the pesticides that were designed to kill them. Farmers continue to spray their crops with the poisons out of frustration.

The ultimate victims of these actions are not the targeted insects.

Ironically, the real victims are the consumers who unknowingly consume tainted foods, the families who are drinking water contaminated by the run-off from the fields sprayed with lethal chemicals, and the children whose minds and bodies will never develop properly because the foods they eat are nutritionally deficient.

There is sufficient evidence to support the claim that the source of each of the above problems can be traced to the fact that our soils are imbalanced. At New Alchemy we discovered that unhealthy plants are generally more susceptible to insect infestation than are healthy plants. In fact, researchers have found that while the "attacking" insects are feeding they often secrete enzymes or hormones that contain critical nutrients that the plant was lacking. Obviously this is just one of the ways Gaia ingeniously provides the immobile plant with the cure for what ails it.

Healthy soils produce healthy plants and minimize the *need* for insect infestation.

I propose that an integrated pest management (IPM) strategy that combines soil remineralization programs with the techniques developed at the New Alchemy Institute, Rodale Farm, The Land Institute, and other organizations devoted to biological agriculture would result in multiple benefits for both urban and rural communities: increased food production; reduction of input costs to farmers; a cleaner, healthier environment; more nutritious food for consumers; healthier individuals; jobs created by the growth of a rock grinding industry; and a heightened awareness of our relationship with Gaia.

I'm not promoting remineralization as a panacea for all of humanity's ills. However, I do feel that remineralization will effectively act as a socio-economic "trimtab." Buckminster Fuller articulated the "trimtab principle" to describe how small amounts of energy and resources applied at the appropriate places in a system can bring about desired changes in that system—changes that at first glance would seem impossible to leverage.

In physical systems such as an ocean liner, trimtabs are small flaps positioned at the trailing edge of the ship's rudder. Because large ships develop tremendous momentum as they cut through the water, a large force is required to change their direction. Without a trimtab, turning the ship's

rudder expends a great deal of energy. Only a fraction of that energy is needed to turn the trimtab, however. When the trimtab pivots on its hinges, it creates a partial vacuum that *pulls* the rudder to one side. This action turns the ship.

At any given time there are appropriate trimtabs for every system. That is to say that there are always *nonviolent* ways in which the direction of a system can be changed. Trimtabs quite often involve technologies, but not always. Some may primarily involve organization or institutional change.

Right now, it would appear that an international reforestation/IPM project based on remineralization is the trimtab that is called for. Here in the United States, such a program could be funded by two sources. First, the United States Dept. of Agriculture (USDA). General guidelines for an IPM/Remineralization program could be drawn up by an interdisciplinary panel. Each state could then apply for funding by developing a proposal based on these guidelines but adapted to their particular bioregion.

Secondly, we should try to influence the agendas of President Reagan's proposed *Plant Science Centers*. The *New York Times* recently reported that the Reagan Administration has completed a plan calling for a network of research centers devoted to developing less expensive farming techniques and discovering new varieties of crops (*New York Times*, August 11, 1987). The Administration has asked Congress for \$10 million to begin the first six centers which would be based at universities. Unfortunately, the way the program is designed, federal scientists will *only* entertain proposals from universities. That will make it difficult for non-traditional approaches to be considered. Nonetheless, we should make every effort to take advantage of this program which is slated to begin as early as October of this year.

On the international scene, it would be interesting to test the World Bank's commitment to environmental issues by proposing that they provide funding to developing nations for remineralization and integrated pest management programs.

Gregory Watson



When Betsan Coats began speaking around the world she found many people who listened. Not only did they listen, they felt a strong commitment to do something- to be a grapevine for remineralization and the climate crisis.

Today it is a loose network of people, (decentralized, not an "organization") who support each other, circulate materials, send news of their activities and projects to Don Weaver's *Solar or Ice Age? Bulletin* and *SR* newsletter- along with news of other related events

in their regions and countries. It is a growing community, a grapevine on our beautiful earth which seems to grow smaller and more fragile every day.

Betsan created a beautiful logo which is sometimes used by Coordinators and is printed on the back page of *SR*, and a poster available which was also designed by her. The poster is intended for distribution in public places from health food stores to local supermarkets and other meeting places. Many thousands have been printed. They are free, but donations for them and mailing costs appreciated

and encouraged to keep them going. Hamaker Coordinators rely on their own resources to get the message out- through mailings and correspondence, encouraging soil remineralization locally, speaking locally, writing articles, speaking to policy makers in government and the media and whatever else they can think of!

Included here is a list of coordinators to contact for information and there are so many more by now who do these same things, with the same commitment and do not happen to refer to themselves as Hamaker Coordinators.

## Central America

**Edmundo Kandler**  
Apdo. 2569  
1000 San Jose  
Costa Rica

## South America

**Carlos Aveline**  
Rua Thomaz Flores 133,  
apto 202  
93000, Sao Leopoldo RS  
Brazil

**Maria Rosa de Garcia**  
Paul Harris 959  
5600 San Rafael, Argentina

**Maria Noemi Molina**  
Las Heras 1133  
5600 San Rafael, Argentina

**Eva Montano**  
A.A. 6305  
Cartagena, Colombia  
tel. 46579

**Camilo Mazuera**  
Diagonal 109 #3-20  
Bogota, Colombia  
Tel. 46579

## Africa

**Mrs. Kathy Brookes**  
Wigespruit Fellowship Ctre  
P.O. Box 81  
Roodeport 1725  
Transvaal, South Africa

**C.A. Bunton**  
Box 22023 N3  
Kloofsig 0034, Pretoria  
South Africa

## Asia

**Geshe Achok Rinpoche**  
The Tibetan Library  
Dharamsala  
HP 146215  
N India

**Nilam Pandey**  
Director Sungava Trade  
P.O. Box 3485, Links  
Kathmandu, Nepal

**Mr. Chimanbhai Patel**  
27 Sapatro Colony  
Baroda 390005  
Gujarat, India

## Australia and New Zealand

**Ms Alex Alexander**  
The Trees' Office  
Camelot Court  
61 Bulcock Street  
Caloundra 4551  
Queensland

**Betsan Coats**  
P.O. Box 77  
Cotton Tree  
Queensland 4558, Australia

**Chris Farmer**  
14 Silica St  
Lightning Ridge 2830 NSW

**Cheri Foale** c/o Post Office  
Aldinga Beach  
South Australia 5173

**Vernon Lawrence**  
EMS  
GPO Box 473 D  
Melbourne 3001, Victoria

**Steve Mellor**  
Acres Alive  
RMB 1105  
Wodonga 3961, Victoria

**Barry Slogrove**  
M.S. 591-6 Beenham Valley  
Rd  
WOLVI VIA GYMPIE,  
QLD 4570

**Frank Scarf**  
36 Mountview Avenue  
Hazelbrook NSW 2779

**Sheena McDuff Stevens**  
The Grain and Salt Society  
c/o Post Office  
Pioneer Village 7264  
Tasmania

**Keith Gray**  
Ngakura  
R D I, Rotorua, New Zealand

## Europe and G.Britain

**Maria Felsenreich**  
Hochwaldstr. 37  
A-2230 Ganserndorf-Sud  
Austria

**Madame Julia Lemee**  
3 Rue Corneille  
Paris 75006  
France (for China)

**Renate Meier**  
71 Bois-Chapelle  
1213 Onex-Geneve  
Switzerland

**Eileen Noakes**  
East Leigh Farmhouse  
Herberton, Totnes  
Devon TQ9 7SS  
Great Britain

**Harold F. Lane**  
20 Fresherin Point  
Isle of Lewis PA 86 0HE  
Western Isles, Scotland

**Mark Fielden**  
182 Holland Rd  
London W14 8AH  
United Kingdom



# **Soil Remineralization**

## **For Horticultural/Agricultural/Forestry Applications**

### **History and Overview**

#### **The Origin of Soils**

The soils of the world have been derived from rocks that have been crushed/ground by glaciers, or expelled by volcanoes, and subsequently subjected to the weathering action of climate by wind, water, variation in temperature or by modern day mechanical crushing.

#### **The Average Age of Soils**

Most of our soils are over 10,000 years old. This time frame coincides with the last period of glaciation. There are exceptions where glaciers are still actively grinding rock and releasing the fine particles into rivers which flood low lying areas regularly.

The most dramatic demonstration is the Alluvial valleys in the Hunza region of the Himalayas where two modern day phenomena occur- firstly, the natural fertility of the soil, and secondly, the age to which the population live (up to 140 years of age).

The linkage between these two situations is related to the freshly ground rock which forms the Alluvial soil in as much that silt is slowly releasing a balanced range of minerals which in turn stimulate the multiplication of microorganisms which in turn recycle essential plant nutrients. This culminates in the establishment of a fertile environment for plants to grow vigorously and healthily with the ability to be more resistant to disease.

### **The Degeneration of Soils**

Since their formation, soils have been losing their inherent fertility (demineralization) by natural processes (percolating rainfall leaching nutrients to the drainage system and wind and water erosion removing topsoil) and man's cultivation which results in the removal of soil nutrients in crops for human consumption.

Today most soils have lost many of the essential nutrients and are unbalanced. Nutrient levels have declined in most areas of the world with many tragic examples of total degradation- the deserts of North Africa and the Middle East and recent examples of rapidly declining soil fertility- The Murray River area in Australia. This unbalanced soil situation is known as "demineralized soil" where because of the lack or imbalance of minerals being released, microorganisms are less active with little or no nutrient recycling occurring. Therefore, the soil fertility chain is destroyed resulting in undernourished and disease susceptible plants.

#### **Soil demineralization occurs through natural processes:**

a) The percolating rainfall leaching nutrients to the drainage systems (streams/rivers/oceans).

b) Wind erosion removes the soil to other areas. Again we have seen dramatic examples in recent times of increased damage by wind erosion. Accelerated by the breakdown in soil fertility (demineralization) one such example is the wheat land in the Mallee in Victoria.

c) Water erosion removes top soil and  
d) Water erosion removes top soil and

depending on the state of demineralization, water erosion will accelerate the more an area is demineralized. For example, in poorly mineralized soils, where the micro organisms are less effective, there will be less fibrous material to hold the soil.

Soil is demineralized through the artificial means of:

a) Man's cultivation of the soil for food crops. The historical effects of cultivation in this manner are covered later.

b) Irrigation practices on poorly structured and demineralized soils have lead to salination- the biggest soil problem in Australia today.

c) Industrialized man has created pollution in various forms, but as related to demineralization of the soil, acid rain is the best example.

### **Acceleration and Retardation of Soil Demineralization**

Soils known to be fertile and actively cultivated 10,000 years ago are now invariably deserts as a result of nutrient removal and subsequent topsoil erosion.

Although demineralization is a natural process there are many examples of when man's influence has accelerated or retarded this process:

a) The deserts of North Africa were once fertile, producing healthy crops. Man's harvesting of the forest and subsequent cultivation has caused a decline in rainfall with increased wind activity resulting in erosion of the top soil. Further acceleration resulted from continual cropping with little or no return of nutrients to the cropped soil.

b) Soils in China that were derived from wind blowing glacial flour (high in natural nutrient sources) were cultivated by the Chinese, under a system of organic recycling thus slowing down the process of demineralization.

c) The Murray river region is a good example of modern day practices leading to rapid demineralization of soil. At the turn of the century such soils were already poor (highly demineralized). With tree removal, excessive application



of water (flood irrigation) and artificial fertilizers, we have successfully accelerated a situation which will be very difficult, but not impossible to retrieve.

## The Introduction of Artificial Fertilizers

For the past two hundred years, man has been able to exploit soils that had become nutrient deficient (by natural processes) by the application of chemical fertilizers. To date we have concentrated on supplying those nutrients required in relatively large amounts (Nitrogen, Phosphorus and Potassium) with some notable example of trace elements, (those required in relatively small amounts) use in specific soil types, for example, zinc and copper in the pastoral "deserts" of South Australia and Victoria and Molybdenum in the high rainfall pastoral soils of Eastern Australia.

## The Plant Denial Effect

As we cultivate more intensively (e.g. vegetables and other irrigated crops) so we find the need to add additional nutrient elements to the soil. Such addition of individual nutrients can upset the balance and often renders the dwindling supply of inherent nutrients unavailable to soil microorganisms and plants, thus the expected yield responses are not always achieved.

Many foliage sprays of 'balanced' nutrients are on the market to attempt to improve vegetable yields. Such measures are only temporary, for the life of the crop, and can often produce tasteless, soft, pest susceptible crops.

The cost of growing crops in unbalanced soils are:

- Having to combat pests and diseases.
- The excessive water requirements (up to 4 times of those required for well balanced soils)
- The dissipation of costly human resources.
- The cost of human/animal health with crops not taking up sufficient minerals to meet human and animal nutritional needs.

## Table of Essential Plant Nutrients

Supplied from Air and Water		Supplied from Soil Solids		Supplied from Soil Solids	
Carbon	(C)	Nitrogen	(N)	Iron	(Fe)
Hydrogen	(H)	Phosphorus	(P)	Manganese	(Mn)
Oxygen	(O)	Potassium	(K)	Zinc	(Zn)
		Calcium	(Ca)	Copper	(Cu)
		Magnesium	(Mg)	Boron	(B)
		Sulphur	(S)	Molybdenum	(Mc)
				Chlorine	(Cl)

## The Elements of Balanced Soil

Rocks (e.g. basalt, lava, granite, shale, slate) supply the nutrients necessary for plant (and animal) growth. A soil derived from a nutrient "balanced" rock is said to be fertile. Soil supplied plant nutrients (at least 13) are required in specific proportions. Plants take up additional elements that are essential for animal and human health (at least 8).

(See table above) Plants in turn take up additional elements that are essential to human and animal health: Sodium, Selenium, Iodine and Cobalt. As well, although not essential, some elements appear to have beneficial effects on some plants eg. Silicon, Vanadium, Chromium and Aluminium. But excesses of any other than the essential beneficial elements can have a toxic effect on plants, rendering a lesser abundance of nutrients.

## Remineralization of Soil-Process

Remineralization is the incorporation of original rock (finely ground) to the growing zone of nutrient exhausted and eroded soils.

In order to rebuild fertility as stated in the *History and Overview*, we in theory could spread rocks on to our soils. However the more practical way to achieve successful remineralization is to further mill rock dust, as found in our commercial quarries, to an estimated size of 200# mesh fineness. This product, applied at various rates to the plant growing zone of nutrient exhausted and eroded soils, should provide us with the basis of developing a remineralized balanced soil.

## The Purpose of Applying Ground Rock

Ground rock applications are aimed at restoring the original balance of fertility that existed in the soil when it was formed 10,000 or more years ago, thus duplicating the environment to as near its original state. Once achieved, food production increases will improve economic returns to the treated land. Perhaps more importantly, further decline can be arrested.

## Remineralization Lowers Costs

Remineralization will provide a balanced environment for plants to grow efficiently, resist the ravages of pests and diseases and produce high yields (many times that on exhausted soils). The direct benefit lowers cost of total production. In Australia's case this will enhance the country's ability to be export competitive.

## Quality Benefits

Crops grown in remineralized soils will provide the necessary nutrient balance for human requirements and be attractive in taste as well as appearance. From a quality aspect, commercially higher prices will result. In addition, a wider range of markets become available.

Because the crops are of a higher quality in the total sense, stock will conserve energy, the health of both humans and animals will show a marked improvement due to more minerals being made available.



## Benefits of Slow Release Ground Rock

Once remineralized (i.e. finely ground rock incorporated in the top 10-30 cm.) a soil may produce high and palatable yields for many years before a subsequent treatment is required. Dependent on rate of application, the cost can be a once only situation, with a multiplying effect on resultant years. More importantly, if no action is taken, one must take into account the loss of production and income with further soil deterioration.

## Rate of Application of Ground Rock

This is where we start to identify potential market segments:

a) Broad acres/Forestry- significant responses can be achieved from as little as 500 kg/ha for broad area crops such as wheat, barley, sunflowers, sorghum, field peas).

b) Vegetable and Irrigated Crops- desirable application rates for vegetable and other irrigated crops are 2000 to 5000 kg/ha. The lower rate may need to be annually for a few years.

c) Home landscape- home gardens which have invariably been constructed out of subsoil fill will respond remarkably to remineralization. Application rates of 2 kg per sq meter, incorporated to a depth of 30 cm will produce vibrant lawn, ornamental and vegetable gardens and fruit trees for years. The gardens will be established much more quickly and use much less water than the conventional methods of establishment. To further address the environmental effects for new home landscape development in the future, will be the need to supplement the current practice of transporting soil from more fertile areas. In the not too distant future soil extraction permits will cease due to new legislation being drafted. Therefore, the need to compile heavy doses of ground rock thoroughly mixed with subsoils will be necessary to achieve a balanced soil.

## Remineralization Through the Combining of Ground Rock Organic and Inorganic Material

Changing social and habitat situations have led to the development of new products for the growth of plants- the development of soil-less potting mixes which offer high moisture retention/balanced nutrients/ long life and are disease free when sold is one example- a further refinement of this product would be the addition of 10-15% rock flour to provide nutritionally stable and balanced media.

Other components in this combining process could be composted manures (fowl, manure) and by-products of industry, the most compatible being Kiln Dust from cement/lime works.

As an example of the rapid development in soil-less potting mixes, commercial nurseries 2 years ago used approximately 10% soil-less mixes. Today this figure is 50% of total Victorian market and estimated to be as high as 90% within 18 months (nursery industry has a predictable growth rate averaging 10-14% over the next 10 year cycle.

## Sources of Remineralization Material Ground Rock

In former years it has been said that Australia rides on the sheep's back (the author still holds this basic view). The economists more recently tag Australia as potentially the world's quarry for the purposes of soil remineralization- undoubtedly, a true statement.

a) Our commercial quarry system is well placed to benefit from further reducing existing quarry rock dust (3mm-150# mesh) to a standard of 200# mesh.

b) Over burden, currently a major negative cost component to commercial quarrying operations, is potentially a viable prime source of ground rock for remineralization of soil.

c) Agricultural areas with loose surface rock could be treated with a portable crushing plant which would directly

return the ground rock to the soil.

d) Kiln Dust when combined with ground rock is one of the best artificial remineralization agents. Because the potential percentage of kiln dust is relatively low, ground rock acts as a convenient carrier.

## Market Potential

### Preliminary Market Potential Victoria

Estimates to date are for a total market in excess of 13 million tonnes in Victoria, with an annual tonnage of 300-4000,000 tonnes per annum in Victoria going into the following market sectors:

Home Garden  
Market Gardens  
Orchards/Vineyards  
Nurseries  
Corporate/Public Landscaping  
Remineralization Saline Areas/  
Irrigation  
Forestry/Pastoral/Cropping Land

Cost effective applications can be justified from \$15-\$50 per tonne depending on the market segment.

Particularly in the Forestry and Horticultural industries there is an improved opportunity to agglomerate rock dust with other products such as kiln dust and other industry by-products. This also has the benefit of allowing the product to be distributed by a variety of techniques.

## Research and Development Requirements To Confirm Commercial Viability

Market potential is based on overseas experience, research and development needs to be carried out to determine the Victorian and Australian commercial market. *The Australian Institute of Re-Vegetation* has been formed and will be based at V.C.A.H. Burnley as a joint venture project between Government agencies and private investors. Direct further inquiries to:

Principal James Davis  
VCAH Burnley, Burnley Gardens  
Swan Street, Richmond  
Victoria 3121, Australia  
tel. (03 810-8800



# International Gravel and Rock Dust Sources

## Australia

**Australian Mineral Fertilizer**  
Hendon Industrial Park  
113 Tapleys Hill Rd  
Hendon 5014  
Western Australia

**Natural Mineral Fertilizer**  
Norm Todkill  
21 Blackwood Ave  
Morningside 4170  
Brisbane tel 07 399 1230

## Austria

**Bioglück**  
A-3950 Wielands  
tel 02852 2414

**Diabaswerk**  
A-5760 Saalfelden  
tel 06582 2373

**Firma Diwoky**  
Frachtenbahnhof Gersthof  
A-1180 Vienna tel 472241

**Firma Gleichenteil**  
Gleichentheilgasse  
A-1230 Vienna  
tel 672193, 672194

**Kärnter Basalt**  
Kampach, St. Paul  
Lavanthal

**Konrad Planegger**  
Diabas Werk  
A-9134 Launsdorf  
tel 04213 2044

**Sanvita**  
Hartsteinwerk Kitzbühel  
Attn: Mr. Abermann  
Postfach 44  
A-6370 Kitzbühel  
tel 05356-4333-0

**Robert Schindele**  
Furnierwerk Kicking 18  
A-3122 Gansbach

## France

**Societe de Carrieros de St. Nabor**  
67530 Ottrot

## Germany

**Basalt Vertriebsgesellschaft mbH and Co KG**  
Südniedersachsen  
Bramburg,  
D-3404 Adelebsen

**Basaltwerk Wiesau/Opf. Triebendorf**

**Firma Ernst Otto Cohrs**  
Postfach 1165  
D-2720 Rotemburg/Wumme

**Firma Hauri KG**  
D-7805 Botzingen/  
Kaiserstuhl

**Lava Union**  
D-5485 Sinzig

**Porphyrwerke Weinheim**  
Shriesheim AG  
Postfach 1609  
D06900 Weinheim

**Schotterwerk**  
D-7613 Hausach Hechtsberg

## Switzerland

**Bertrand Rime**  
1751 Middel  
Fribourg  
tel 037 681335

**Bioticino**  
V. Gautschin, V C Molo 1  
6500 Bellinzona, Tessen  
tel 092 262 984

**Firma Otto Gamma AG**  
Seestrasse 336  
8038 Zurich  
tel 02 832765

**Johann Wenger**  
Muller Poffetmuhle  
1717 St. Ursen  
Fribourg tel 037441173

**Maurice Schillinger**  
Garten Center, Rte Suisse  
1196 Glant, Vaud  
tel 022 642267

**Wytor SA**

## United Kingdom

List of 80 quarries in U.K.

**Redland Aggregates Ltd**  
David Langley  
Technical Manager  
Bradgate House, Groby  
Leics. LE60FA

## U.S.A.

**Azome-Utah West**  
Rollin Anderson, Jr.  
P.O. Box 88-1176  
San Francisco, CA 94188  
(415) 641 7101

**Brookside Farms Lab**  
for mineral analysis  
Director Mark Flock  
308 S Main St  
New Knoxville, OH 45871

**Dr. Soils Glacial**  
Box 891  
Captain Cook, HI 96704

**Gordon Fellows for Mineral Analysis only**  
Suburban Experiment Station,  
Beaver St  
Waltham, MA 02154

**Laurence Lynch Co**  
Falmouth, MA 02540

**Michigan Aggregates Corp**  
996 East Chicago Rd  
Gerome, MI 49249  
(517) 688 4414

**Trace Minerals Marketing**  
Organic Life Soil Min  
300 Fremont #113  
Las Vegas, NV 89101

**Peaceful Valley Farm Supply**  
11173 Peaceful Valley Rd  
Nevada City, CA 95959  
(916) 265 FARM

## Vulcan Materials Co

Joseph H Scott  
Wayne P Robertson  
250 Maclellan Bldg  
Chattanooga, TN 37402  
(615) 266 4872

Cliff Kirkmyer  
P O Drawer 1590  
Manassas, VA 22110  
(703) 631 2060

Mickey R Love  
P O Box 4195  
Winston-Salem, NC 27105  
(919) 767 4600

J Lloyd Sentell  
P O Box 7  
Knoxville, TN 37901-6001  
(615) 579 2903

John T Douglas  
500 West Plainfield Rd  
Countryside, IL 60525  
(312) 482 7000

Dick Bade  
1127 South Chicago Street  
Joliet, IL 60436  
(815) 726 5285

Daniel Roadruck  
P O Box 5529  
West Lafayette, IN 47906  
(317) 743 2175

W Max Stephens  
P O Box 80730  
Atlanta, GA 30366  
(404) 458 4481

Hal C Stokes  
P O Drawer 8834  
Greenville, SC 29604  
(803) 2772371

Frank Prieto  
P O Box 660097  
Miami Springs, FL 33166

Alan C Stanfield  
P O Box 7324-A  
Birmingham, AL 35253  
(205) 877 3642

Pat D Kerry  
P O Box 29310  
San Antonio, TX 78229

Steven Welp  
2227 N E Couch  
Portland, OR 97232  
tel (503) 232 5208

Mark Williams  
Rte 1 Box 199B  
Horatio, AK 71842



# The Magic of the Vinegar Jug- and now with trace minerals

By  
*Arthur and Catherine  
Summers*

I can remember when I was a lad, way back in the very early years of this century that the vinegar jug sat in the middle of the dinner table at all times. A good portion of our food got a squirt from that jug because we had all been trained to like both the sweet and the sour. In those days sour was tastier than sweet and the sugar bowl, in many cases, was passed up for a shot of the vinegar. Even a sweet fruit like apple sauce is tastier with vinegar added.

Apple cider vinegar is one of our wonder foods. It not only has all the goodness of the apple, but in processing it has gained a five percent solution of acetic acid. This is the acid our system just loves. It is very easily assimilated directly into the blood stream and here is where its wonders begin.

The blood is your river of life. It feeds and nourishes your entire body and it also at the same time washes and cleans your body. The acetic acid content of your blood stream is comparable to the detergent you use in washing dishes. If you want to see this in action, break an egg, place the shell in a cup and cover with apple cider vinegar and watch it dissolve all the minerals from that egg shell in just a few short days, leaving nothing but the egg sac membrane. A person who keeps his system on the acid side is continuously washing his veins and arteries. A blood stream that is on the alkali side will drop its minerals within the blood vessels causing hardening of the arteries. If you turn that same bloodstream to the acid side it will immediately begin to reabsorb those minerals and carry them away. If it were possible to look back to the very first of this century you would find that our country was almost entirely devoid of heart disease and cancer. Thanks to the vinegar jug.

I am now past eighty years old and all during my life have had very little sickness. I can not remember my mother or father ever being sick and my wife Catherine, who has been with me for over fifty years, has never been sick in all that time.

Earlier in this century when Gaylord Hauser, J. I. Rodale, Dr. Ira Allison and Dr. William Albrecht and

many others were discovering minerals, and especially trace minerals, Catherine put my whole family on bone meal. This was over forty years ago and later she added a teaspoon full of dolomite powder for extra magnesium. And with that she raised a whole family of kids that have been disease free and every one with perfect teeth without a single cavity and now up to forty five years of age.

Today is a whole different ball game, the picture is entirely different within the second and third generations. They have fillings, braces are necessary in most or all mouths of teeth, plus most everything else of this modern age. They lack the brilliance, the learning power, the ambition to learn and to do, to become. In fact, I can see most of Hamaker's book prophecies within my own family. It isn't their fault they are like that, they have been robbed of their share of the trace minerals which are the very spark of life and the catalyst which fires life's processes and awakens sleepy, lazy organs. Hamaker wants to remineralize the world. How could we possibly do that with the people we have today? The only way it could be done would be to remineralize these younger people and hope we can retrieve a part of what we have lost in these last two generations.

As Hamaker says, cancer and disease were put on Earth as scavengers so as to rid the Earth of growths that are discordant to nature's plan. Cancer and disease can not live and grow in a healthy body; the body has to be sick and out of tune with nature before the body will support either of them. If your system is on the acid side the natural defenses of nature will give protection. If you allow your system to remain on the alkali side, which is the perfect medium for the growth of cancer and disease, they will get so strong that they will overpower your natural defenses.

When I first read Hamaker's TSOC it took me back to the days I was working with Dr. Ira Allison of Springfield, Missouri, who was Dr. Albrecht's right hand man (Dr. Albrecht was head of the Missouri Dept of Agriculture). I was Dr. Allison's photographer and recorded his experiments. At

that time Dr. Allison was known in Missouri as "The Father of Trace Minerals". The only part of TSOC that was new to me was about the gravel dust. I hadn't thought of that before or heard it mentioned. At that time, on my bookshelf in front of me was a copy of Dr. D. C. Jarvis' book "Folk Medicine". I had studied this book years ago and the entire book is on the treatment of most any ailment with vinegar and honey.

It also had the experiment of dissolving the egg shell in vinegar and I had made that experiment and it works beautifully. I immediately conceived the idea of dissolving trace minerals from gravel dust by soaking the dust in vinegar for four or five days, then started taking this mineralized vinegar along with a spoonful of honey.

My son Richard, who is now the family gardener had decided to remineralize the garden and had had a load of gravel screenings dumped ready to be spread in September. The screenings came from a deposit of the Willamette River, which is considered to be of glacial origin. For my personal use I rescreened a portion to a dustlike fineness and infused it in vinegar without further treatment, because vinegar is such a wonderful preservative that I could see little need for further treatment. However, beginners whose system may be strongly on the alkali side may want to sterilize the first few batches of gravel dust in their ovens for a short time before infusing in the vinegar. I started taking this mineralized vinegar in mid September and could immediately see a great difference in my energy capacity. I hadn't done a lick of hard labor for many years and there was that fifteen ton load of gravel screenings on the garden that should be spread and tilled in and Richard was so busy he couldn't find time. I couldn't possible have done the job without the mineralized vinegar, but after only five days on the trace minerals my energy practically exploded and I found myself with wheelbarrow and shovel and dust just flying. I spread the dust, tilled it in and sowed it in clover. Today in October it is already beautifully green. So let me suggest that everyone of us start remineralizing ourselves, our friends, our children with gravel dust, vinegar and honey.



Let us call it....

## The Golden Elixir of Life

When it is made as I make it, it has a pale golden color and is delicious. Take a gallon of apple cider vinegar and pour off one quart. Pour into the jar enough screened gravel dust to cover the bottom about one half inch deep after it has settled. Set the jar on the floor near where you sit, or work, or read, so that is is handy to give a little shake quite frequently. After it has infused for five days you can start using it. So, pour off a quart on the sixth morning while it is completely settled out and add the first quart you have already drawn off back to the jar. You could also add a couple new ounces of gravel dust and just keep on going. How long the present dust you have in the jar can be used is something we will have to learn as we go along.

Now trace minerals are just that, they are only in trace quantity, in some cases measured in parts per million. That's not much, but they are like the little spark that fires the charge in the combustion engine; it's a small spark but does a terrific job. Both your body and the engine burn fuel and the spark that fires your organs into production is a catalyst. Trace minerals are the sparks

that fire your system into producing catalysts.

Besides trace minerals you also need other minerals in larger quantities. This mineralized vinegar is not going to furnish your full mineral diet. For the past forty years I have had a daily intake of bone meal and dolomite powder. Four bone meal tablets and one teaspoon of dolomite. This gave me large quantities of calcium, phosphorous, magnesium and others. You may be told that you cannot assimilate these, and this may be true in an alkali system, but with the vinegar added to your diet and your system running strongly on the acid side they can and will be assimilated.

I cannot tell you how much you will need but will tell you how we use it, how much and when. The first thing in the morning we have a glass of water with two or three spoonfuls of mineralized vinegar and one of honey. This repeated later in the day or early in the evening. The bonemeal and dolomite can be taken at either time and are just as important as the mineralized vinegar. This may or may not be enough vinegar

for your system. You need enough to turn your system to the acid side. To test for this and make certain you are okay use the test offered by Dr. Jarvis in his little book *Folk Medicine*. You will need some nitrazine testing paper from the drug store. For the test cut off a 1/2" piece and test your first morning urine using the scale on the test paper package. Get a copy of *Folk Medicine* at your health food store or you may find it for less than a \$1 at a used paperback store. We have used this now for over two months with good results. We have found it best to infuse the gravel dust in the vinegar at least seven days and are now using the mineralized vinegar from jars that have had mineral dust in them for over thirty days. It may be that its like aging whiskey, the longer the better.

Now you know as much about this as we do. Get busy, put this to work, time's a wasting. Make copies for your friends, publish it, spread the word. But by all means put it to work in your own family.

Best Wishes,

Arthur P. and

Catherine L. Summers

## The Climate Crisis and Human Survival by Bertram Cohen

- Good introduction and summary document of the climate crisis
- Contains many excellent questions to be posed to government officials

Available For \$7.00 ppd. From

SOCIETY FOR AN EXTENDED ETHIC, INC.  
1139 Woodside Trail  
Troy, Michigan 48098

The Climate Crisis  
And  
Human Survival

Written by Bertram Cohen, July 1987

Typeset and Page Layout by  
Debra Vuckovich, January 1988



## Editorial Note

A reflection on the challenge of creating possibilities that work, so that billowing clouds of truly inspired ideas do not float off into the land of impossibility, impracticality or disillusionment. On turning dreams and positive thoughts and more **into reality-**

The newsletter is a forum and a bulletin board for its readers. There are many readers with projects in the works who wish to gather financial, moral and other kinds of support to further these projects.

The intention is to present them as fairly and accurately as possible. It is truly not possible to assess all projects personally.

We all wish the very best for projects that further our aims of climate stabilization, remineralization and the promotion of ecological sustainability. We need to use our heads, along with our hearts in seeing how we can best contribute the resources we have towards those aims. Discrimination is advised and closely investigating any project to which you may contribute your valuable resources beforehand personally, and *SR* will do its very best not to misrepresent as far as recommendations or information.

There is no doubt about the sincerity of any proposals sent in but there are factors of practicality, feasibility of a vision or concept, know-how that need to be determined, and conveying it briefly in the newsletter is a challenge as the newsletter aims to have the most positive influence possible on the outcome of projects and not cut short their potential.

*SR* puts the best face forward for each project as the creator of the project would wish, but not wishing to add credibility where it is not appropriate.

Do take care and check out the details carefully before contributing your resources. It is important to distinguish towards projects that are more substantial and others may have to bite the dust. Letters that are critical or negative experiences need to be aired with the possibility for response. This way it will truly be a forum and not just an opinion of the editor, favoring one project over another or merely promoting every possibility under the sun, regardless of merit.

That means that those of you who present projects must be responsible for them as a variety of responses, not just the positive ones, may be printed in the newsletter. You will always be given any opportunity to respond in return.

This newsletter is a forum for soil remineralization, not just "an at any cost" promotion of the subject. *SR* takes a pragmatic approach, not an ideological one and no words are "sacred", not even those of John Hamaker!\* Your various letters inform and help me to try and "get it right" in the newsletter, a worthwhile, if challenging task. *SR* neither wishes to encourage squabbles nor be some kind of fantastic rumor mill, but it is also important not to squelch any controversy.

Joanna Campe, Editor

\*John's comment: "My words ...come down straight off the mountain!"

## Mark Williams Promises More Than He Can Deliver?

Since publication of the last issue the newsletter has received some letters from those who have had unhappy experiences with Mark Williams, either ordering rock dust and not receiving it, or putting down deposits for grinders that appear to be further down the road from production than the articles of Mark so optimistically portrayed. Another reader visited him in Arkansas and expressed the opinion that the project was not substantially underway and did not appear to be soon. See Dick Hogan's impressions of a more recent visit for another point of view.

Mark Williams mentioned to the newsletter delays due to lack of funds. After reading the last article John Hamaker pointed out some instances in which Mark made claims that were not feasible or really worked out from his own point of view as a mechanical engineer. He was also very critical of the idea of a franchise that would grant "exclusive territory".

*SR* is sorry not to have printed the editorial note here sooner. There is probably no quality more important than integrity in the work we are doing and the newsletter aims to uphold that quality at all times.

*SR* can only continue to stand by its commitment to represent any project or proposal as fairly and as responsibly as possible in the future.

---

## Latest Word from Mark

The very latest news from Mark is that he feels he has made amends to those that were unhappy so far and has begun sending off orders of rock dust. He also feels confident about progress he has recently made on the grinder. Naturally lack of funding and resources have caused considerable delay.

J.C.



# Update from Mark Williams on Grinder Troubles and Successes, and *Stone Flour* Availability

---

We have both bad news and good. The bad news is that we have had a long drawn out battle to solve a problem with the grinders. Basically, the problem has to do with getting the dust out of the grinding chamber as the unit grinds. It sounds real easy, and both Hamaker and I assumed it was, in fact, "no problem". During the last several months, I discovered otherwise. I spent the last seven months building several prototypes.. trying to effectively remove the dust with either a flow of air or water. Neither would work right. And I could not get it to work satisfactorily.

Meanwhile, we are "out of production" during those months of struggling... unable to fill orders for dust. One reason for that was the fact that, due to a shortage of funds, parts had to be borrowed from previous prototypes to build the next one with, leaving us without a functioning grinder with which to fill orders. As time went on, I got more and more frantic; trying desperately to get the dust out of the latest prototype. This was frustrating because the grinders, right from the beginning, were GRINDING just fine... wonderfully fast, as a matter of fact. But I could not get the dust out, as they ground!... only a small percentage could be removed.

A month ago, I made one last attempt to get it to work... and discovered yet another "problem" that I had been unaware of all this time. I won't go into the details, here... suffice it to say that it became apparent that I'd probably never get it work right. I was forced to use the LAST RESORT... which is to forget trying to blow or wash out the dust, and just simply "dump out" the contents of the chamber (including the dust) after each "grinding

stroke". That method has some major disadvantages (such as requiring a more complicated "mechanism"), but at least it works! In the last few weeks, we have built and tested a "dumping" grinder... with great results. What a fantastic relief it was to finally be able to remove all the dust, as it's produced. We are finally going to be back into dust production... filling orders, etc. (we regret any inconvenience that our lapse in production has caused to those who ordered dust from us during our period of "struggle"). Anyone interested in ordering dust from us may inquire about current availability, prices, and additional information.

Now that the "dust removal problem" has been overcome, we are doing a last minute experiment with a modification of the grinder itself, which may dramatically increase the overall efficiency, and make the grinder more compact, lighter, easier to maintain, more wear resistant, etc. We are experimenting with extremely high pressures... following up a hunch I have... that we have yet to achieve the efficiency that these grinders are actually capable of. We will soon find out (the next issue of SR will probably have the report on this). In a week or two, we hope to be able to proceed with the "manufacture" or the grinders (a dozen have been ordered, so far, by people wishing to become "Authorized Producers"). Due to the unexpected "dust removal problems", we have had to put off the manufacturing of these, naturally. At least the grinders will now be "superior" (if not "on time")... having all the improvements we've

come up with during these last months of experimenting (including the current test of Ultra High Pressures). Again, we regret the delays in getting these grinders built... but the "new style" grinders will turn out to be worth the wait, I'm sure (inquire if you'd like more information on this subject).

Now, we still have one last major problem; we feel like we need to accelerate the building of the dozen grinders that have been ordered (and others to follow). Time is obviously running out. The need for efficient grinders is self evident. And quick action is desired. But we simply don't have the funds to get these grinders built anywhere near as quickly as we'd like. The main problem is the low deposits we have been requesting for the grinders... barely enough to cover the cost of the materials. I am thus left without funds for hired helpers, and other costs (such as a larger welder, desperately needed). Luckily, once these first few grinders are built and delivered, we will begin to receive the royalties for them, and will then be in great shape (plenty of funds for expansion, etc.). In order to get to that point as soon as possible, I'm willing to take on loans from individuals in the "SR Network" who wish to help. A total of \$20,000 or so is desired, but any reasonable sized loan would be appreciated (a few hundred dollars, or thousands), along with donations (if desired). All loaned funds will be put directly into the manufacture of production grinders (not prototypes or experiments), with pay back occurring in one to two years (up to 12% annual interest added). Royalties on the use of these grinders will be the main source of "pay-back funds".

Thanks to everyone for "bearing with us" during this troublesome period of "false starts" we've been going through.

**Mark Williams**  
see address below

## Dick Hogan visits Mark Williams

On a recent trip to the Ozarks, I spent some time with Mark Williams who is developing a Dust Maker/Grinder. Mark is learning a good deal about gravel and dust. I think he is close to a breakthrough in small scale dust making. The major problem with the process has been removal of the fines from the larger particles without dumping the

"grinding" chamber. Dumping and dust separation appear to be necessary steps with the current design evolution. Mark is now developing that aspect. With our support, assistance and some initial capital soon, I am confident Mark will be able to start delivering dust-making equipment and *Stone Flour* yet this year. (Mark Williams, Rt. 1, Box 199B, Horatio, AK, 71842 USA)

As pressing as the need is, I want to encourage many others to share the challenge to design and build dust-

making equipment. Several machine configurations (both rotary and reciprocating) and scales are needed: Hand and Foot Power, small multi-family farm and multi-farm community scales (at least). So those with the skills and motivation, (designers, engineers, mechanics and inventors)- go for it! Your assistance is needed. Then make and spread "Peace Dust, Plant Peace Forests and Watersheds, Peace Gardens...

Shalom,

**Dick Hogan**



# Letters

## From Daryl Kollman

Thank you for running the full page on Elect Daryl J. Kollman- President. There are so few people who recognize the problem and then fewer still who are willing to take a stand and then even fewer who are willing to DO something. Thank you for being a D0-er! There is ALWAYS a way!

Daryl J. Kollman  
Klamath Falls, Oregon

## Paul Hawkins writes on remineralization

If you read the Paul Hawkins book on business, he also has a TV show series, you can find listed as a poor Business plan one that he received on remineralization. The plan, in this bright entrepreneur's judgement was fine until it began to talk about the coming ice age. At that point it was discarded as a possible venture for this rapidly expanding company.

I think we all need to heed this comment. I think it is fine to talk about the climate instability at the top political level, but not at the grass roots. If we could get small farmers, home gardeners, perhaps some parks to do it, then we could develop support for having the government do the large scale work.

Virginia Goldstein  
Oakland, California

## Rodale writes

It makes me feel good every time I send one (of the flyers, **Dear President of Helping Organization**) in response to a mailing that has come to me. I don't know if they ever reach the president of the organization, but I hope that someone along the way reads the message and gets involved.

The last 2 issues of the newsletter were really inspiring. There's something so heartening about knowing people are out there- really aware, and really taking steps in the right direction.

Did you see the February editorial in Robert Rodales's *Organic Gardening*? It seems the impossible is coming true, he's finally mentioned the usefulness of rock, although in a very spiritual rather than practical way. I'm hoping this is in preparation for his introducing further information about remineralization. He writes,

"Both an organic and a regeneration gardener will use rock powders to renew soil fertility. To an organic gardener they are natural, acceptable, and practical kinds of fertilizer. To a regeneration gardener they are soil builders but they are also inspirations."

I'm going to write to him just to say I appreciate his stand and hope he goes further.

Judith Werner  
Bronx, New York

## News From Hamaker Coordinators

Recently the *Guardian* newspaper published an article on gravel dust ... by Nicholas Albery. I followed this up with a 2 1/2 minute talk on Radio Scotland on remineralization, and the *Stornoway Gazette*, followed this up by wanting an article from my report which they picked up on the news. A month ago I travelled down to Glasgow to the Euro-Tech Scotland Exhibition and visited universities interested in my plans for research, also the Agro-Collge and talked about putting the package together for the European Community who showed great enthusiasm, and to which I sent a package of material nearly 3 weeks ago. Now the Scottish Development Agency is in touch with me and is very interested in promotion. ..[This] could help SR forward with myself co-ordinating research in Scotland...If this is possible then a great forward move can be made in research, development and consulting from here...Research in Canadian universities might suggest a start for research programmes in Scotland. A sound base to our work is becoming urgent, particularly as soon we will be in confrontation with the drug companies and petro-chemical industries. We want reliable results from our work, and knowledge about the methodology of agrogeology.

I feel it is time the co-ordinators got involved with university sponsored research, so that we can become an accepted authority with a background of useful research information about rocks and methods for remineralization, including the relationship between soils and plants.

Harold F. Lane,  
Isle of Lewis, Western Isles, Scotland

...My first trial was an absolute failure after which my gang of students spent much time gathering rock samples from surrounding areas in the valley but our activities came to a complete halt due to lack of grinders. I have now realized it is impossible to carry the load alone so am approaching the Social Services National Co-Ordination Committee for assistance and support. I will let you all know of the results. Meanwhile, I wish you all success and peace in 1988. May nature bless your attempts to preserve it.

Nilam Pandey  
Katmandu, Nepal

editor: The failure referred to was covered in SR #8, using marble dust for remineralizing trees.

Your Directory of the U.K. sources (last newsletter is not correct, Mr. David Langley tells me he does not have a list of U.K. Quarries.) However I have a list of U.K. Quarries for Granite, Basalt and Glacial Gravel. I also have made up a list of Calcified Seaweed, Gypsum, Dolomite and Rock Phosphate suppliers, as it seems to me they all have their part to play. As a Dietary Therapy student, I never guessed that it would lead me on this path of research and discovery. Please include me in your network list, as I am very happy to share information with others.

Eileen D. Moore  
Enfield, Middlesex, United Kingdom



Steve Mellor is taking over at *Acres Alive Farm* as official Hamaker Co-ordinator. He does a terrific job growing vegetables with Rock Dust. He already has a team of local gardeners using rock dust and asking him to be co-ordinator with Marketing.

In the near future I plan to assemble photographs so that I can send you a series of the farm and also of the recent success of rock dust here with dead trees! Or nearly so.

**Jeannie (Sheena) McDuff-Steven**  
Pioneer Village, Tasmania, Australia

## SR Studies and Projects

I have made a list of desired goals relating to this work, starting slowly and on a small scale; eventually to reach dispersal of gravel dust on a large scale.

...The University of River Falls, Wisconsin has agreed to do some small scale research, testing both yield increase and product nutrient value increase. I am doing this order to provide some "sound scientific" research that will aid in the selling of the "product" to people who will buy only if they can justify it economically in the long run.

Another project I am juggling is working on gravel dust distribution through coops, ad extension agencies, schools, greenhouses, etc. This of course is all small-scale but we must begin somewhere and work up.

Finally, I would like to see organic farmers using the product this year. I have the opportunity this late winter and early spring to join several different organic farmers conventions and give small workshops regarding glaciation and remineralization. If I can prove remineralization to be profitable, the large food companies which don't have stock in chemical companies may switch to this method of farming-- maybe not exclusively, but some is better than none. And indeed, the Universe knows our bodies are starving for vitamins and minerals.

...Consider me an arm, reaching from Hamaker, his message, the earth to the people, the farmers.

**Amy Nystrom**  
Minneapolis, Minnesota

I attended a Schumacher Seminar in Gt. Barrington last Fall where I received a complimentary copy of *Soil Remineralization*, Spring, 1986. Much to my chagrin I did not read it until last week; but when I did it seemed like a prayer answered.

I am a student at the *School for International Training* in Brattleboro, Vermont, where I am enrolled in a combined graduate/undergraduate program. I have spent three years as a volunteer in overseas development service and aspire returning to Africa particularly to practice organic farming among women farmers in near-desert areas. I have studied the Findhorn Gardens approach and have tried to expose myself to all possible areas of research, including New Alchemy, but was always left with the nagging feeling that revitalization of desert soil has to take more than irrigation and composting. Soil remineralization through gravel dust seems to me to be an exciting answer, especially since the area I am anticipating has a lot of rocks. I want to know more.

As part of my coursework I am required to spend at least thirty weeks on an internship, at least half of which must be overseas. I am hoping on my internship to work closely with a group or organization in the area of organic farming. I would be delighted if that could include exposure to soil remineralization, ad if it is overseas, so much the better.

My training has been almost exclusively in the area of management and administration, but I have included courses like Appropriate Technology, Environmental and Population Studies and Community and Social Development, as well as International Economics. I have a lot to offer a group or organization in exchange for training in the above areas of interest. As finances are a problem, I would hope to work out such an exchange. Thanks to any of you receiving this letter for any help you can offer.

**Marian Rose**  
**School For International Training**  
Kipling Road, Brattleboro, VT 05301

I am intending on working in the area of sustainable agriculture/ecosystem studies at Iowa State University next fall. My Phd project would be greatly enhanced if I can learn as much as I can about the Process of remineralization, the optimal minerals, methods and rock crushing techniques.

Hopefully, I can begin to work (inside the machine of the status quo) to open some eyes and change some hearts in the quest of a healthy land. Your help is greatly appreciated. Please forward this to John Hamaker and anyone else you see fit to share my plans with.

**Paul Tweed**  
Augusta, Wisconsin

## A Solstice Reader Responds

I read about the climatic crisis the earth is experiencing in Solstice. Your newsletter was included in the list of further research...Do you know of other people, in my area, who are active in soil remineralization? For that matter, anyone who would care to correspond and set up a support group would be very welcome.

**Tom Lonsky**  
Genoa, New York

I am currently working with an inventory and should have some rock dust in a few days. Not sure of the fineness, I will have to check after a sample is run.

I farm 1400 acres- no chemicals and will try to make the remineralization work this year. I have a lot of corn stored 200,000 bushels chemical free "as much as I can control". I will have corn to sell if anyone is interested.

**Robert A Love**  
**Love Grain Company**  
Harmony, Minnesota

I would like to look at a copy of your soil remineralization newsletter. A local farmer, Bob Love, told us about it. Land Stewardship Project is working with area farmers on reducing their reliance on chemical inputs. One major concern is alternate sources of crop nutrients, and the soil remineralization concept may be of interest to the farmers.

**David Granatstein**  
**Land Stewardship Project**  
Lewiston, Minnesota



A year ago last spring I added one pound per square foot of gravel dust (43% thru 200 mesh) to my garden. This winter I had my annual complete soil test done. The soil is quite well mineralized but the organic matter level dropped at least 1% to below a level of 1%. Of course, I will add plenty of compost this coming year. The warning here, as Hamaker implies in *TSOC*, is don't oxidize your organic matter by putting on excessive amounts of dust. A rule of thumb might be- higher levels of organic matter can handle larger amounts of dust.

**John Cowan**  
Campe Verde, Arizona

It was great to get the last two issues of *SR*. You are doing a great job with the newsletter and it's a very important thing. Every time I read the latest issue of *SR* I get encouraged and my energy to share about this work is renewed. It's also a great forum for the exchange of ideas and hopefully a network will come out of it that can really get things done.

...While in San Francisco, we met with Don Weaver and spent a couple of hours chatting with him and sharing ideas. He is real sincere and committed to what he is doing and it was inspiring for me to be with him. He gave me a flyer about the movie and I think this is a real step forward to have this tool.

I am going to be doing lectures soon to promote Super Blue Green Algae. I always start them out by talking about soil demineralization. We will have copies of *TSOC* available for sale and some handouts for people to take home. If you have a flyer for *SR* with a description of it and info on how to subscribe, I'd be glad to run it off and hand them out.

We also stopped in Klamath Falls to see Daryl Kollman. I was pleased to see the ad in *SR* about his presidency. It looks like we need to create some political mechanism to effect changes soon.

Thank you for running us in the Network section of *SR*. We have received some inquiries already and look forward to making contact with people who are aware of the demineralization challenge.

**Loren Spector**  
Arlington, Texas

A pen pal from New Zealand gave me your literature last July but I did not find the time to read it til now. I agree with your type of Agriculture 100%. I have been working with it for the past 25 years. I first came across it in the two books "Clean Culture" by Raymond Bernard; "Super Foods from Super Soil" by Dr. Raymond Bernard. Address: Health Research, 8349 Lafayette St. Mokelumne Hill, CA 95245.

In the past years I was able to get my Granite rock dust from where they were building roads from the jack hammer. One day we went up to Matheson Ontario, which is 350 miles north from here to get some Greensand. To our disappointment they would not let us have any. There was a pile as high as the town water tower. It also is the answer to our health problems!

One day I went down to Toronto Ontario, and lectured to the Dept. of Agriculture but no response. With this kind of attitude we will not get anywhere! Find enclosed slipping on "The Valley of the Giants". I looked into this and discovered that back a million years ago there was a volcano which deposited the rock dust. This is nature's way in building the

soil. With all the work I have been doing I cannot find anyone who is interested in it to the extent that they will use it. So as excellent as it is I cannot see any reason to spend large sums of money except to use it in my own back yard.

This type of agriculture is so versatile that you can use the coral rock on the islands of the South Pacific.

**Earl Zimmerman**  
Ontario, Canada

*editor: The article on "Valley of the Giants" showed a photograph of an 80 lbs cabbages and carrots that measured a foot around. It is the Matanuska Valley and the article appeared in an issue of the National Enquirer. The article also describes the ideal temperatures in summer and 24 hours of sunlight, major factors as well for the growing success.*

In today's San Diego Union appears an article about a man who for 22 years has been supplying decomposed granite as foundation material for buildings. Would this work for soil remineralization as rock dust does?

**Bruce Taylor**  
Valley Center, CA 92082

**From John Hamaker:** I recommend only gravel dust ground as fine as cement. The mixture of stones in gravels are what nature uses.

## Remineralization Time

Farewell various jobs of all types and all sorts,  
not conducive to the biosphere, judged in nature's course.

Just making money also, isn't my thing, and never was  
I'd rather have health and Love, "Did you hear that, 'cause?"

Often having another agenda in mind,  
From the peanut gallery would wail, "Hey there,  
tote that bar; what are you one of the weird kind?"

Bye bye conventional industry, I'll sing my retirement song,  
Alas, I'm called for duty; I've neglected my Earthly Mother  
for far too long.

She bore, nursed, and nurtured me, and she has grown weak,  
I must come to her aid, and that's all I can speak.

Brothers and Sisters, I'm calling you,  
But you're only true Brothers and Sisters,  
If you'll help Mother too.

Let's cleave together... A true family,  
Heaven calls to Earth so clear...can you see?

For us to be healthy, the Earth must be healthy too,  
What you do to the Earthly Mother,  
the same will become of you

So long have I waited for the chance to be free,  
This time, no not this time, will I miss this opportunity.

**Ron Kastle**  
Rosedale, NY

continued page 26



# The Network

Subscribers are invited to join the listing, so please let us know so we can include you. Listed in one issue each year, each subscriber receives all the issues of the year.

**Joe Alexander**  
P.O. Box 3200  
Fayetteville, AR 72702  
(501)521-9027

Artist devoted to improvement of art through improvement of health and environment.

**Darnell Ashley**  
5320 Arbor Vitae St. apt. #7  
Los Angeles, CA 90045  
(213)641-6227

**Charles Baum**  
5770 Reinelt Rd.  
Deckerville, MI 48427  
(313) 376-8347

**Edward Burt**  
R.R. 1  
Gore Bay, Ontario  
Canada, P0P 1H0

**Louise Burwick**  
East Wind Community, Box 682  
Tecumseh, MO 65760

I'm learning and practicing *Natural Farming* (M. Fukuoka) as a vegetable gardener. I've been going more in this direction for several years, with companion planting, non-tillage, etc.

**Greg Cumberford**  
664 San Juan St.  
Stanford, CA 94305  
(415)327-4722

Conducting a year-long soil remineralization experiment using Stanford's facilities and a Williams grinder. Will report results, progress in future issues. I welcome all inquiries and methodological suggestions.

**W.J. Dieffenbach**  
R. 2  
Bloomfield, Iowa 52537  
(515) 675-3318

I would like to hear from farmers or others in this area, interested in remin. and regenerative agriculture. Also, looking for stone dust for retail, within 100 mi radius of tri-state area.

**Derald Ell**  
Rt. 2 Box 30  
Killdeer, ND 58640  
(701) 863-6657

**Tom Ellis**  
1812 26 Ave. S.W. Apt. #19  
Calgary, Alberta  
Canada T2T 1E1  
(403) 228-1571

Is there anyone else working with rock dust in Alberta, Canada or near the Calgary area? Perhaps we could work together.

**Leon Fadden**  
P.O.Box 149005  
Orlando, FL 32814-9005  
(305)648-1716

Natural hygienist, computer engineer, financial broker. Would love to talk to people in my area with organic interests.

**Eddie Filer**  
Route 6, P.O. Box 1850G  
Naples, FL 33964

I have been gardening organically for many years and still learning. I haven't used the rock dust yet but plan to do so in the near future. I have just recently heard of this concept, and would like to hear from other interested persons in this area.

**Vincent G. Gay**  
Rte 2, P.O. Box 1350  
Starke, FL 32091

I have about 7 acres in natural growth pine. I am retired.

**Brother Alois Goldberger**  
Regional House Ubbog  
Bangued, Abra, 0101  
Philippines

**Coco Gordon**  
138 Duane St.  
New York, NY 10013  
(212)285-1609

Paper maker, Visual & Performance artist, Poet, Artist book-maker, Dealing with vital earth/water/healing issues. Am collecting data and anecdotes for an artist book on threats to food (spray, irradiation, single crop planting, etc.), please contribute.

**Robert G. Hoffman**  
6935 Foxwaithe Lane  
Humble, TX 77338

Would like to organize with other members in the Houston area.

**Helene Huber**  
P.O.Box 43  
Salfordville, PA 18958

Co-founder of **earth stewards**- a working group taking earth care as a spiritual discipline.

**Mr. W.B. Joyce**  
7911 Sherwood Ave.  
Towson, MD 21204  
(301)337-8010

**Olivia Kemp**  
Old Hebron Rd.  
Colchester, CT 06415  
(203) 537-3937

Would like to get with someone in my area. I have half an acre that I would like to apply dust to and plant vegetables this summer.

**Ron Kastle**  
P.O. Box 61  
Rosedale, NY 11422  
(718) 528-2870

Would like to correspond with other SR enthusiasts to remineralize for morality and profit.

**Michael Kolodny**  
RFD 2, P.O. Box 104  
Lancaster, NH 03584  
(603) 788-3122

Authorized producer and dealer of stone flour.

**Bernie Kravitz**  
P.O. Box 448  
Canoga Park, CA 91305

**Harold F. Lane**  
20 Flesherin Point  
Isle of Lewis  
Western Isles, PA86 0HE  
Scotland, UK

Involved with remineralization on croft land in Lewis for horticulture and forestry. Attempting to get University support in Scotland for research into Agrogeology and its application and appropriate funding.



**Robert Love**  
**Love Grain Company**  
Harmony, MN 55939  
(507) 937 3445

I'm a large organic farmer (see **Letters**) and have built a gravel grinder and am looking for funding.  
*editor: This is last minute exciting news and a proposal and news of this will be in the next issue. I suggest contacting him if you can support his project in any way.*

**Loren Spector**  
**Macrobiotic Learning Center**  
710 W. Main St., Suite 2013  
Arlington, TX 76013

**The Macrobiotic Center of Louisiana**  
4323 Carondelet  
New Orleans, LA 70115  
(504) 897-5065

We are a holistic health center dedicated to educating people to honor and nurture themselves so they in turn can honor and nurture the planet.

**Jean Malotte**  
21650 Keeney Rd.  
Freeland, MD 21053  
(301) 343-1196

Recent owner of 8 farmable acres and want to heal them for potential herb and/or market growing.

**Russell Mariani**  
P.O. Box 1867  
Conway, NH 03818  
(603) 356-2507

**Paul J. Miller**  
201 N. Columbus St.  
Crestline, OH 44827

**Rhoda Mozorosky**  
7338 Oak Hill Rd.  
Roseburg, OR 97470  
(503) 459-4700

It would be nice to start a group in Oregon (Douglas County) interested in soil remineralization and raising home orchards without pesticides.

**Eileen D. Moore**  
5 Chase Side Place  
Enfield, Middx.,  
EN2 6QA, U.K.

I have info and gravel dust sources for the U.K.

**George M. Myers**  
9311 Charleston St.  
El Paso, TX 79924  
(915) 751-2792

**Namaste Greens**  
Box 578  
Barnstead, NH 03225

We just spread 26 tons of rock dust.  
**Doing It Together-** Participants with Nature, Synergy-Affinity Action. Ecology Studies- Being with nature. Green principles of Unity in actions, summer wilderness camping, sustainable ag, meditation, yoga, sauna, hot tub, swims, etc, Membership \$100 + 100 hours participation per year. (Apr-Oct)

**Amy Nystrom**  
1200 Nicollet, apt. # 407  
Minneapolis, MN 55403  
339-4432

**Patrick O'Connor**  
420 West Edwards  
Springfield, IL 62704  
Growing trees.

**M.C. Pereira**  
CIDSE-PNH, c/o Indoswin Ltd  
Suite 1102B, 11th floor  
Durit Thani Office Bldg  
946 Rama 4 Road  
Bangkok 10500, Thailand

I work as an agronomist at the Institute of Agriculture, Fishery, Forestry, Mechanization and Animal Science. There are very little resources here in terms of english books, finance and plant material. I'm trying to develop a small resource base of books and plant material to start on small scale sustainable systems. I'm looking for plant material and books for Kampucha, if anyone is interested in helping us let me know. We have a tropical climate.

**Frederick I. Scott Jr.**  
6925 Dogwood Rd.  
Baltimore, MD 21207  
(301) 298-5716

Interested in measured evaluations of remineralization tests.

**Elaine Seiler**  
P.O. Box 799  
Great Barrington, MA 01230  
(413) 229-2612

**Pete Thack**  
4439 Byron Rd.  
Howell, MI 48843  
(517) 546-5404

**Mr. Louis Tiscia**  
148 Dixon Ave.  
Paterson, NJ 07501

**Boycott  
plastic food  
packaging**

## Letters con't

I wish to inform you that I have included your [newsletter] as a valuable resource in my **Transform Rejuvenate & Heal the Earth Now! Resource List...** This list will be distributed to millions of people throughout the world.

**Shoshame**  
**Transformational Research, Inc.**  
Hartford, Connecticut

## **Response from Dowsters to ASD Article**

Today I read your article in the American Society of Dowsters. Thank you. I'm with you 1000%. When I dowse you word on Rock Dust, it swings wildly- good! Truthful! Great! I'd enjoy beginning to receive the newsletter-

**Phillip Kelly**  
North Dartmouth, Massachusetts

To say that I was enthralled by the article in *The American Dowser* is practically an understatement. Your article, of course, my interest in this has existed since sometime previous to 1920. It is really a wonderful idea to take to the ASD.

**George E. Smith**  
Van Nuys, California

**Mr. Dominick Trombetta**  
1525 Davis Road  
Woodruff, SC 29388

**Joy Wilton Hill**  
"Aberfoyle"  
Via Armidale 2350  
Australia

**Glenn Wiprud**  
12702- 15 Ave. N.E., apt. #208  
Seattle, WA 98127  
365-0904

Interested in starting a cooperative.

**Eldon G. Worsley**  
Rte #3- 705 N 39th Rd.  
Mendota, IL 61342

Farmer. Would be interested in talking with farmers who have experience with the remineralization process.

**Diana Young**  
61 C Carmelita St.  
San Francisco, CA 94117



## 1988 Subscriptions

It continues to be more practical to ask subscribers to renew at the new year and make sure each new subscriber receives all the copies of the year. You may have a complimentary copy and then find it is part of your subscription. The 3-4 copies each year will include all those who wish to be in the network listing and *How To* articles do not need to be repeated in every issue.

Rather than a commercial newsletter, it is a community grass roots network that stretches to every continent. Formatting and writing is contributed by the editor and others of the network. Single copies are available. A U.S. subscriber is helping to subsidize the cost of an outside the U.S. subscription which can cost as much as \$1.50-12.00 to mail. That explains why there is little price difference between subscriptions inside and outside the U.S. The aim is to network around the world where remineralization can offer ecological self

sufficiency in place of dependency on unhealthy chemicals, pesticides and herbicides. Remineralization needs to take place worldwide. It is hoped the readers support this approach.

Printing a newsletter with a small circulation is relatively expensive per issue.

Subscriptions are slightly higher this year to cover postal rate increases. If you feel you cannot pay \$12 (U.S) or \$15 (outside the U.S.), you can still receive the newsletter. This newsletter is available to all those who wish to receive it. If you wish to exchange publications or some other exchange for a subscription, please write SR..

It is a goal to have the newsletter be financially self sufficient. So far the budget seems to be covering only 2-3 issues for 1988. It will probably be necessary to print fewer copies, and have less complimentary copies available for networking at conferences to keep costs down.

It is hoped it will be possible to produce 4 issues this year. It depends in part on the budget and volunteer help.

Thank you, readers, for your contributions: results of remineralization, photos, articles, experiences, and initiatives on a local or larger scale, be they commercial or cooperative- finally, SR is the reflection of all of you out there!

### In this Issue continued

SR will try to investigate and update the source list in the next issue, so if you find this to be true for a particular source you've had contact with, I would appreciate a note letting me know. The list for Vulcan Materials, for ex., was submitted by an expert with the company recommending these sources, but SR has not really investigated. This will help greatly to update the list. Perhaps we can also review those sources to see which are best. So please let me know also if you've found a source of gravel dust you're really happy with.

I would especially like to thank Chantal Payette and Piet Bouter for their assistance in getting this issue out.

J.C.

## Subscriptions 1988

I would like to receive *Soil Remineralization, A Network Newsletter*. I enclose a check (made out to Soil Remineralization) for \$12.00 in the U.S. or U.S.\$15.00 (outside the U.S.), for a 1988 subscription (3-4 issues). Single copies are also available on request. Send to SR, 152 South Street, Northampton, MA 01060.

Name \_\_\_\_\_ Phone \_\_\_\_\_  
Street/Box \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Would you like to be part of The Network Listing? Yes\_\_\_\_ No\_\_\_\_

A brief description:

I would like to donate time, a resource or make some other contribution to SR:





WITH FINE-GROUND RIVER, SEA-SHORE AND GLACIAL GRAVEL  
AND FINE-GROUND MINERAL-RICH ROCKS FROM MOUNTAINS IN A  
NATURAL MIX, REMINERALIZES AND REGENERATES, THE SOIL,  
STRENGTHENS GROWTH AND RESISTANCE TO POLLUTION AND  
ACID RAIN IN TREES, INVIGORATES ALL PLANT LIFE AND GREATLY  
INCREASES THE NUTRITIVE VALUE IN FOOD.

## HAMAKER CO-ORDINATION

See "The Survival of Civilization" by John Hamaker and Don Weaver.

Available from P.O.Box 1961, Burlingame, CA 94010

Book US \$12 inclusive of postage. Airmail postage extra.

INFORMATION CONCERNING REMINERALISING THE SOIL IS ORGANISED  
ON A VOLUNTARY BASIS. WE CAN ALL HELP TO SAVE OUR EARTH -  
PHOTOCOPY THIS PAPER AND SEND IT TO YOUR FRIENDS.

## SOIL REMINERALIZATION A NETWORK NEWSLETTER

Joanna Campe  
152 South Street  
Northampton, MA 01060